

Pro Leu His Tyr Val Val Ile Met Asn Pro Arg Leu Cys Gln Gln Leu  
 130 135 140

Ala Ser Ile Ser Trp Leu Ser Gly Leu Ala Ser Ser Leu Ile His Ala  
 145 150 155 160

Thr Phe Thr Leu Gln Leu Pro Leu Cys Gly Asn His Arg Leu Asp His  
 165 170 175

Phe Ile Cys Glu Val Pro Ala Leu Leu Lys Leu Ala Cys Val Asp Thr  
 180 185 190

Thr Val Asn Glu Leu Val Leu Phe Val Val Ser Val Leu Phe Val Val  
 195 200 205

Ile Pro Pro Ala Leu Ile Ser Ile Ser Tyr Gly Phe Ile Thr Gln Ala  
 210 215 220

Val Leu Arg Ile Lys Ser Val Glu Ala Arg His Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ser Ser His Leu Thr Val Val Ile Ile Phe Tyr Gly Thr Ile Ile  
 245 250 255

Tyr Val Tyr Leu Gln Pro Ser Asp Ser Tyr Ala Gln Asp Gln Gly Lys  
 260 265 270

Phe Ile Ser Leu Phe Tyr Thr Met Val Thr Pro Thr Leu Asn Pro Ile  
 275 280 285

Ile Tyr Thr Leu Arg Asn Lys Asp Met Lys Glu Ala Leu Arg Lys Leu  
 290 295 300

Leu Ser Gly Lys Leu  
 305

<210> 327  
 <211> 954  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1)..(951)  
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<400> 327  
 atg ggg atg gtg aga cat acc aat gag agc aac cta gca ggt ttc atc

488

	245	250	255	
acc atc atc ttc atg tat ctg cag cca gcc aag agt aga tcc agg gac				816
Thr Ile Ile Phe Met Tyr Leu Gln Pro Ala Lys Ser Arg Ser Arg Asp				
	260	265	270	
cag ggc aag ttt gtt tct ctc ttc tac act gtg gta acc cgc atg ctt				864
Gln Gly Lys Phe Val Ser Leu Phe Tyr Thr Val Val Thr Arg Met Leu				
	275	280	285	
aac cct ctt att tat acc ttg agg atc aag gag gtg aaa ggg gca tta				912
Asn Pro Leu Ile Tyr Thr Leu Arg Ile Lys Glu Val Lys Gly Ala Leu				
	290	295	300	
aag aaa gtt cta gca aag gct ctg gga gta aat att tta tga				954
Lys Lys Val Leu Ala Lys Ala Leu Gly Val Asn Ile Leu				
	305	310	315	

&lt;210&gt; 328

&lt;211&gt; 317

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 328

Met Gly Met Val Arg His Thr Asn Glu Ser Asn Leu Ala Gly Phe Ile
1 5 10 15

Leu Leu Gly Phe Ser Asp Tyr Pro Gln Leu Gln Lys Val Leu Phe Val
20 25 30

Leu Ile Leu Ile Leu Tyr Leu Leu Thr Ile Leu Gly Asn Thr Thr Ile
35 40 45

Ile Leu Val Ser Arg Leu Glu Pro Lys Leu His Met Pro Met Tyr Phe
50 55 60

Phe Leu Ser His Leu Ser Phe Leu Tyr Arg Cys Phe Thr Ser Ser Val
65 70 75 80

Ile Pro Gln Leu Leu Val Asn Leu Trp Glu Pro Met Lys Thr Ile Ala
85 90 95

Tyr Gly Gly Cys Leu Val His Leu Tyr Asn Ser His Ala Leu Gly Ser
100 105 110

Thr Glu Cys Val Leu Pro Ala Leu Met Ser Cys Asp Arg Tyr Val Ala
115 120 125

Val Cys Arg Pro Leu His Tyr Thr Val Leu Met His Ile His Leu Cys
130 135 140

Met Ala Leu Ala Ser Met Ala Trp Leu Ser Gly Ile Ala Thr Thr Leu  
 145 150 155 160

Val Gln Ser Thr Leu Thr Leu Gln Leu Pro Phe Cys Gly His Arg Gln  
 165 170 175

Val Asp His Phe Ile Cys Glu Val Pro Val Leu Ile Lys Leu Ala Cys  
 180 185 190

Val Gly Thr Thr Phe Asn Glu Ala Glu Leu Phe Val Ala Ser Ile Leu  
 195 200 205

Phe Leu Ile Val Pro Val Ser Phe Ile Leu Val Ser Ser Gly Tyr Ile  
 210 215 220

Ala His Ala Val Leu Arg Ile Lys Ser Ala Thr Arg Arg Gln Lys Ala  
 225 230 235 240

Phe Gly Thr Cys Phe Ser His Leu Thr Val Val Thr Ile Phe Tyr Gly  
 245 250 255

Thr Ile Ile Phe Met Tyr Leu Gln Pro Ala Lys Ser Arg Ser Arg Asp  
 260 265 270

Gln Gly Lys Phe Val Ser Leu Phe Tyr Thr Val Val Thr Arg Met Leu  
 275 280 285

Asn Pro Leu Ile Tyr Thr Leu Arg Ile Lys Glu Val Lys Gly Ala Leu  
 290 295 300

Lys Lys Val Leu Ala Lys Ala Leu Gly Val Asn Ile Leu  
 305 310 315

<210> 329  
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 <213> Homo Sapiens

<220>  
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<400> 329  
 atg gac aca ggc aac aaa act ctg ccc cag gac ttt ctc tta ctg ggc  
 Met Asp Thr Gly Asn Lys Thr Leu Pro Gln Asp Phe Leu Leu Gly  
 1 5 10 15

48



ttt cct ggt tct caa act ctt cag ctc tct ctc ttt atg ctt ttt ctg	96
Phe Pro Gly Ser Gln Thr Leu Gln Leu Ser Leu Phe Met Leu Phe Leu	
20 25 30	
gtg atg tac atc ctc aca gtt agt ggt aat gtg gct atc ttg atg ttg	144
Val Met Tyr Ile Leu Thr Val Ser Gly Asn Val Ala Ile Leu Met Leu	
35 40 45	
gtg agc acc tcc cat cag ttg cat acc ccc atg tac ttc ttt ctg agc	192
Val Ser Thr Ser His Gln Leu His Thr Pro Met Tyr Phe Phe Leu Ser	
50 55 60	
aac ctc tcc ttc ctg gag att tgg tat acc aca gca gca gtg ccc aaa	240
Asn Leu Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Ala Val Pro Lys	
65 70 75 80	
gca ctg gcc atc cta ctg ggg aga agt cag acc ata tca ttt aca agc	288
Ala Leu Ala Ile Leu Leu Gly Arg Ser Gln Thr Ile Ser Phe Thr Ser	
85 90 95	
tgt ctt ttg cag atg tac ttt gtt ttc tca tta ggc tgc aca gag tac	336
Cys Leu Leu Gln Met Tyr Phe Val Phe Ser Leu Gly Cys Thr Glu Tyr	
100 105 110	
ttc ctc ctg gca gcc atg gct tat gac cgc tgt ctt gcc atc tgc tat	384
Phe Leu Leu Ala Ala Met Ala Tyr Asp Arg Cys Leu Ala Ile Cys Tyr	
115 120 125	
cct tta cac tac gga gcc atc atg agt agc ctg ctc tca gcg cag ctg	432
Pro Leu His Tyr Gly Ala Ile Met Ser Ser Leu Leu Ser Ala Gln Leu	
130 135 140	
gcc ctg ggc tcc tgg gtg tgt ggt ttc gtg gcc att gca gtg ccc aca	480
Ala Leu Gly Ser Trp Val Cys Gly Phe Val Ala Ile Ala Val Pro Thr	
145 150 155 160	
gcc ctc atc agt ggc ctg tcc ttc tgt ggc ccc cgt gcc atc aac cac	528
Ala Leu Ile Ser Gly Leu Ser Phe Cys Gly Pro Arg Ala Ile Asn His	
165 170 175	
ttc ttc tgt gac att gca ccc tgg att gcc ctg gcc tgc acc aac aca	576
Phe Phe Cys Asp Ile Ala Pro Trp Ile Ala Leu Ala Cys Thr Asn Thr	
180 185 190	
cag gca gta gag ctt gtg gcc ttt gtg att gct gtt gtg gtt atc ctg	624
Gln Ala Val Glu Leu Val Ala Phe Val Ile Ala Val Val Val Ile Leu	
195 200 205	
agt tca tgc ctc atc acc ttt gtc tcc tat gtg tac atc atc agc acc	672
Ser Ser Cys Leu Ile Thr Phe Val Ser Tyr Val Tyr Ile Ile Ser Thr	
210 215 220	
atc ctc agg atc ccc tct gcc agt ggc cgg agc aaa gcc ttc tcc acg	720
Ile Leu Arg Ile Pro Ser Ala Ser Gly Arg Ser Lys Ala Phe Ser Thr	
225 230 235 240	
tgc tcc tcg cat ctc acc gtg gtg ctc att tgg tat ggg tcc aca gtt	768
Cys Ser Ser His Leu Thr Val Val Leu Ile Trp Tyr Gly Ser Thr Val	
245 250 255	
ttc ctt cac gtc cgc acc tct atc aaa gat gcc ttg gat ctg atc aaa	816

Phe Leu His Val Arg Thr Ser Ile Lys Asp Ala Leu Asp Leu Ile Lys  
 260 265 270  
 gct gtc cac gtc ctg aac act gtg gtg act cca gtt tta aac ccc ttc 864  
 Ala Val His Val Leu Asn Thr Val Val Thr Pro Val Leu Asn Pro Phe  
 275 280 285  
 atc tat acg ctt cgt aat aag gaa gta aga gag act ctg ctg aag aaa 912  
 Ile Tyr Thr Leu Arg Asn Lys Glu Val Arg Glu Thr Leu Leu Lys Lys  
 290 295 300  
 tgg aag gga aaa taa 927  
 Trp Lys Gly Lys  
 305

<210> 330  
 <211> 308  
 <212> PRT  
 <213> Homo Sapiens

<400> 330

Met Asp Thr Gly Asn Lys Thr Leu Pro Gln Asp Phe Leu Leu Leu Gly  
 1 5 10 15

Phe Pro Gly Ser Gln Thr Leu Gln Leu Ser Leu Phe Met Leu Phe Leu  
 20 25 30

Val Met Tyr Ile Leu Thr Val Ser Gly Asn Val Ala Ile Leu Met Leu  
 35 40 45

Val Ser Thr Ser His Gln Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60

Asn Leu Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Ala Val Pro Lys  
 65 70 75 80

Ala Leu Ala Ile Leu Leu Gly Arg Ser Gln Thr Ile Ser Phe Thr Ser  
 85 90 95

Cys Leu Leu Gln Met Tyr Phe Val Phe Ser Leu Gly Cys Thr Glu Tyr  
 100 105 110

Phe Leu Leu Ala Ala Met Ala Tyr Asp Arg Cys Leu Ala Ile Cys Tyr  
 115 120 125

Pro Leu His Tyr Gly Ala Ile Met Ser Ser Leu Leu Ser Ala Gln Leu  
 130 135 140

Ala Leu Gly Ser Trp Val Cys Gly Phe Val Ala Ile Ala Val Pro Thr  
 145 150 155 160

Ala Leu Ile Ser Gly Leu Ser Phe Cys Gly Pro Arg Ala Ile Asn His  
165 170 175

Phe Phe Cys Asp Ile Ala Pro Trp Ile Ala Leu Ala Cys Thr Asn Thr  
180 185 190

Gln Ala Val Glu Leu Val Ala Phe Val Ile Ala Val Val Val Ile Leu  
195 200 205

Ser Ser Cys Leu Ile Thr Phe Val Ser Tyr Val Tyr Ile Ile Ser Thr  
210 215 220

Ile Leu Arg Ile Pro Ser Ala Ser Gly Arg Ser Lys Ala Phe Ser Thr  
225 230 235 240

Cys Ser Ser His Leu Thr Val Val Leu Ile Trp Tyr Gly Ser Thr Val  
245 250 255

Phe Leu His Val Arg Thr Ser Ile Lys Asp Ala Leu Asp Leu Ile Lys  
260 265 270

Ala Val His Val Leu Asn Thr Val Val Thr Pro Val Leu Asn Pro Phe  
275 280 285

Ile Tyr Thr Leu Arg Asn Lys Glu Val Arg Glu Thr Leu Leu Lys Lys  
290 295 300

Trp Lys Gly Lys  
305

<210> 331  
<211> 957  
<212> DNA  
<213> Homo Sapiens

<220>  
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<222> (1)..(954)  
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<400> 331  
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Met Glu Glu Tyr Asn Thr Ser Ser Thr Asp Phe Thr Phe Met Gly Leu  
1 5 10 15  
ttc aac aga aag gaa acc tca ggt ctt att ttt gcc atc atc tct atc 96  
Phe Asn Arg Lys Glu Thr Ser Gly Leu Ile Phe Ala Ile Ile Ser Ile  
20 25 30

atc ttc ttc acc gca ctg atg gcc aat ggg gtt atg atc ttc ctg atc 144  
 Ile Phe Phe Thr Ala Leu Met Ala Asn Gly Val Met Ile Phe Leu Ile  
 35 40 45

caa aca gat ttg cgc ctt cat aca ccc atg tac ttc ctc ctc agc cac 192  
 Gln Thr Asp Leu Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ser His  
 50 55 60

ctt tcc tta att gac atg atg tat att tcc act att gtg cct aag atg 240  
 Leu Ser Leu Ile Asp Met Met Tyr Ile Ser Thr Ile Val Pro Lys Met  
 65 70 75 80

ctg gtt aat tac ctg ctg gat caa agg acc att tcc ttt gtg ggg tgc 288  
 Leu Val Asn Tyr Leu Leu Asp Gln Arg Thr Ile Ser Phe Val Gly Cys  
 85 90 95

aca gct caa cac ttc ctc tac ctt acc ctt gtg gga gct gaa ttc ttc 336  
 Thr Ala Gln His Phe Leu Tyr Leu Thr Leu Val Gly Ala Glu Phe Phe  
 100 105 110

ctg ctg ggc ctc atg gcc tat gac cgc tat gtg gcc att tgc aac cct 384  
 Leu Leu Gly Leu Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Asn Pro  
 115 120 125

ctg aga tac cct gtc ctc atg agc cgc cgg gtc tgt tgg atg att ata 432  
 Leu Arg Tyr Pro Val Leu Met Ser Arg Arg Val Cys Trp Met Ile Ile  
 130 135 140

gca ggt tcc tgg ttt ggg ggc tct ttg gat ggc ttc ctc cta acc ccc 480  
 Ala Gly Ser Trp Phe Gly Gly Ser Leu Asp Gly Phe Leu Leu Thr Pro  
 145 150 155 160

atc acc atg agc ttt ccc ttc tgc aat tcc cgg gag att aac cac ttc 528  
 Ile Thr Met Ser Phe Pro Phe Cys Asn Ser Arg Glu Ile Asn His Phe  
 165 170 175

ttc tgt gag gca cca gca gtc ctg aag ttg gca tgt gca gac aca gcc 576  
 Phe Cys Glu Ala Pro Ala Val Leu Lys Leu Ala Cys Ala Asp Thr Ala  
 180 185 190

ctc tac gag aca gtg atg tat gtg tgc tgt gtt ttg atg ctg ctg att 624  
 Leu Tyr Glu Thr Val Met Tyr Val Cys Cys Val Leu Met Leu Leu Ile  
 195 200 205

cct ttc tct gta gtc ctt gct tcc tat gcc cga atc ctg act aca gtt 672  
 Pro Phe Ser Val Val Leu Ala Ser Tyr Ala Arg Ile Leu Thr Thr Val  
 210 215 220

cag tgc atg agc tca gtg gag ggc agg aag aag gca ttt gcc act tgc 720  
 Gln Cys Met Ser Ser Val Glu Gly Arg Lys Lys Ala Phe Ala Thr Cys  
 225 230 235 240

tca tcc cac atg act gtg gtg tcc ttg ttc tac ggg gct gcc atg tac 768  
 Ser Ser His Met Thr Val Val Ser Leu Phe Tyr Gly Ala Ala Met Tyr  
 245 250 255

acc tac atg ctg cca cat tct tac cac aag cca gcc cag gac aaa gtc 816  
 Thr Tyr Met Leu Pro His Ser Tyr His Lys Pro Ala Gln Asp Lys Val  
 260 265 270

ctc tct gtg ttt tac acc att ctc aca ccc atg ctg aac ccc ctc atc 864  
 Leu Ser Val Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu Ile  
                   275                                   280                                   285

tac agc ctt aga aac aag gat gtg act gga gct ctg aag agg gcc ttg 912  
 Tyr Ser Leu Arg Asn Lys Asp Val Thr Gly Ala Leu Lys Arg Ala Leu  
                   290                                   295                                   300

ggg agg ttc aag ggt cct caa agg gtg tca gga ggt gtc ttt tga 957  
 Gly Arg Phe Lys Gly Pro Gln Arg Val Ser Gly Gly Val Phe  
                   305                                   310                                   315

<210> 332

<211> 318

<212> PRT

<213> Homo Sapiens

<400> 332

Met Glu Glu Tyr Asn Thr Ser Ser Thr Asp Phe Thr Phe Met Gly Leu  
 1                                   5                                   10                                   15

Phe Asn Arg Lys Glu Thr Ser Gly Leu Ile Phe Ala Ile Ile Ser Ile  
                   20                                   25                                   30

Ile Phe Phe Thr Ala Leu Met Ala Asn Gly Val Met Ile Phe Leu Ile  
                   35                                   40                                   45

Gln Thr Asp Leu Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ser His  
                   50                                   55                                   60

Leu Ser Leu Ile Asp Met Met Tyr Ile Ser Thr Ile Val Pro Lys Met  
 65                                   70                                   75                                   80

Leu Val Asn Tyr Leu Leu Asp Gln Arg Thr Ile Ser Phe Val Gly Cys  
                   85                                   90                                   95

Thr Ala Gln His Phe Leu Tyr Leu Thr Leu Val Gly Ala Glu Phe Phe  
                   100                                   105                                   110

Leu Leu Gly Leu Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Asn Pro  
                   115                                   120                                   125

Leu Arg Tyr Pro Val Leu Met Ser Arg Arg Val Cys Trp Met Ile Ile  
                   130                                   135                                   140

Ala Gly Ser Trp Phe Gly Gly Ser Leu Asp Gly Phe Leu Leu Thr Pro  
 145                                   150                                   155                                   160

Ile Thr Met Ser Phe Pro Phe Cys Asn Ser Arg Glu Ile Asn His Phe

165 170 175  
 Phe Cys Glu Ala Pro Ala Val Leu Lys Leu Ala Cys Ala Asp Thr Ala  
 180 185 190  
 Leu Tyr Glu Thr Val Met Tyr Val Cys Cys Val Leu Met Leu Leu Ile  
 195 200 205  
 Pro Phe Ser Val Val Leu Ala Ser Tyr Ala Arg Ile Leu Thr Thr Val  
 210 215 220  
 Gln Cys Met Ser Ser Val Glu Gly Arg Lys Lys Ala Phe Ala Thr Cys  
 225 230 235 240  
 Ser Ser His Met Thr Val Val Ser Leu Phe Tyr Gly Ala Ala Met Tyr  
 245 250 255  
 Thr Tyr Met Leu Pro His Ser Tyr His Lys Pro Ala Gln Asp Lys Val  
 260 265 270  
 Leu Ser Val Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu Ile  
 275 280 285  
 Tyr Ser Leu Arg Asn Lys Asp Val Thr Gly Ala Leu Lys Arg Ala Leu  
 290 295 300  
 Gly Arg Phe Lys Gly Pro Gln Arg Val Ser Gly Gly Val Phe  
 305 310 315  
  
 <210> 333  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens  
  
 <220>  
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 <222> (1)..(972)  
 <223>  
  
 <400> 333  
 atg ggc atg gag ggt ctt ctc cag aac tcc act aac ttc gtc ctc aca 48  
 Met Gly Met Glu Gly Leu Leu Gln Asn Ser Thr Asn Phe Val Leu Thr  
 1 5 10 15  
 ggc ctc atc acc cat cct gcc ttc ccc ggg ctt ctc ttt gca ata gtc 96  
 Gly Leu Ile Thr His Pro Ala Phe Pro Gly Leu Leu Phe Ala Ile Val  
 20 25 30  
 ttc tcc atc ttt gtg gtg gct ata aca gcc aac ttg gtc atg att ctg 144  
 Phe Ser Ile Phe Val Val Ala Ile Thr Ala Asn Leu Val Met Ile Leu

35	40	45	
ctc atc cac atg gac tcc cgc ctc cac aca ccc atg tac ttc ttg ctc			192
Leu Ile His Met Asp Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu			
50	55	60	
agc cag ctc tcc atc atg gat acc atc tac atc tgt atc act gtc ccc			240
Ser Gln Leu Ser Ile Met Asp Thr Ile Tyr Ile Cys Ile Thr Val Pro			
65	70	75	80
aag atg ctc cag gac ctc ctg tcc aag gac aag acc att tcc ttc ctg			288
Lys Met Leu Gln Asp Leu Leu Ser Lys Asp Lys Thr Ile Ser Phe Leu			
	85	90	95
ggc tgt gca gtt cag atc ttc ctc tac ctg acc ctg att gga ggg gaa			336
Gly Cys Ala Val Gln Ile Phe Leu Tyr Leu Thr Leu Ile Gly Gly Glu			
	100	105	110
ttc ttc ctg ctg ggt ctc atg gcc tat gac cgc tat gtg gct gtg tgc			384
Phe Phe Leu Leu Gly Leu Met Ala Tyr Asp Arg Tyr Val Ala Val Cys			
	115	120	125
aac cct cta cgg tac cct ctc ctc atg aac cgc agg gtt tgc tta ttc			432
Asn Pro Leu Arg Tyr Pro Leu Leu Met Asn Arg Arg Val Cys Leu Phe			
	130	135	140
atg gtg gtc ggc tcc tgg gtt ggt ggt tcc ttg gat ggg ttc atg ctg			480
Met Val Val Gly Ser Trp Val Gly Gly Ser Leu Asp Gly Phe Met Leu			
145	150	155	160
act cct gtc act atg agt ttc ccc ttc tgt aga tcc cga gag atc aat			528
Thr Pro Val Thr Met Ser Phe Pro Phe Cys Arg Ser Arg Glu Ile Asn			
	165	170	175
cac ttt ttc tgt gag atc cca gcc gtg ctg aag ttg tct tgc aca gac			576
His Phe Phe Cys Glu Ile Pro Ala Val Leu Lys Leu Ser Cys Thr Asp			
	180	185	190
acg tca ctc tat gag acc ctg atg tat gcc tgc tgc gtg ctg atg ctg			624
Thr Ser Leu Tyr Glu Thr Leu Met Tyr Ala Cys Cys Val Leu Met Leu			
	195	200	205
ctt atc cct cta tct gtc atc tct gtc tcc tac acg cac atc ctc ctg			672
Leu Ile Pro Leu Ser Val Ile Ser Val Ser Tyr Thr His Ile Leu Leu			
	210	215	220
act gtc cac agg atg aac tct gct gag ggc cgg cgc aaa gcc ttt gct			720
Thr Val His Arg Met Asn Ser Ala Glu Gly Arg Arg Lys Ala Phe Ala			
225	230	235	240
acg tgt tcc tcc cac att atg gtg gtg agc gtt ttc tac ggg gca gcc			768
Thr Cys Ser Ser His Ile Met Val Val Ser Val Phe Tyr Gly Ala Ala			
	245	250	255
ttc tac acc aac gtg ctg ccc cac tcc tac cac act cca gag aaa gat			816
Phe Tyr Thr Asn Val Leu Pro His Ser Tyr His Thr Pro Glu Lys Asp			
	260	265	270
aaa gtg gtg tct gcc ttc tac acc atc ctc acc ccc atg ctc aac cca			864
Lys Val Val Ser Ala Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro			
	275	280	285

ctc atc tac agc ttg agg aat aaa gat gtg gct gca gct ctg agg aaa 912  
 Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Ala Ala Ala Leu Arg Lys  
 290 295 300

gta cta ggg aga tgt ggt tcc tcc cag agc atc agg gtg gcg act gtg 960  
 Val Leu Gly Arg Cys Gly Ser Ser Gln Ser Ile Arg Val Ala Thr Val  
 305 310 315 320

atc agg aag ggc tag 975  
 Ile Arg Lys Gly

<210> 334  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 334

Met Gly Met Glu Gly Leu Leu Gln Asn Ser Thr Asn Phe Val Leu Thr  
 1 5 10 15

Gly Leu Ile Thr His Pro Ala Phe Pro Gly Leu Leu Phe Ala Ile Val  
 20 25 30

Phe Ser Ile Phe Val Val Ala Ile Thr Ala Asn Leu Val Met Ile Leu  
 35 40 45

Leu Ile His Met Asp Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu  
 50 55 60

Ser Gln Leu Ser Ile Met Asp Thr Ile Tyr Ile Cys Ile Thr Val Pro  
 65 70 75 80

Lys Met Leu Gln Asp Leu Leu Ser Lys Asp Lys Thr Ile Ser Phe Leu  
 85 90 95

Gly Cys Ala Val Gln Ile Phe Leu Tyr Leu Thr Leu Ile Gly Gly Glu  
 100 105 110

Phe Phe Leu Leu Gly Leu Met Ala Tyr Asp Arg Tyr Val Ala Val Cys  
 115 120 125

Asn Pro Leu Arg Tyr Pro Leu Leu Met Asn Arg Arg Val Cys Leu Phe  
 130 135 140

Met Val Val Gly Ser Trp Val Gly Gly Ser Leu Asp Gly Phe Met Leu  
 145 150 155 160



Thr Pro Val Thr Met Ser Phe Pro Phe Cys Arg Ser Arg Glu Ile Asn  
 165 170 175

His Phe Phe Cys Glu Ile Pro Ala Val Leu Lys Leu Ser Cys Thr Asp  
 180 185 190

Thr Ser Leu Tyr Glu Thr Leu Met Tyr Ala Cys Cys Val Leu Met Leu  
 195 200 205

Leu Ile Pro Leu Ser Val Ile Ser Val Ser Tyr Thr His Ile Leu Leu  
 210 215 220

Thr Val His Arg Met Asn Ser Ala Glu Gly Arg Arg Lys Ala Phe Ala  
 225 230 235 240

Thr Cys Ser Ser His Ile Met Val Val Ser Val Phe Tyr Gly Ala Ala  
 245 250 255

Phe Tyr Thr Asn Val Leu Pro His Ser Tyr His Thr Pro Glu Lys Asp  
 260 265 270

Lys Val Val Ser Ala Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro  
 275 280 285

Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Ala Ala Ala Leu Arg Lys  
 290 295 300

Val Leu Gly Arg Cys Gly Ser Ser Gln Ser Ile Arg Val Ala Thr Val  
 305 310 315 320

Ile Arg Lys Gly

<210> 335  
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 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(945)  
 <223>

<400> 335  
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 Met Ala Asn Ile Thr Arg Met Ala Asn His Thr Gly Lys Leu Asp Phe  
 1 5 10 15  
 atc ctc atg gga ctc ttc aga cga tcc aaa cat cca gct cta ctt agt 96

WO 02/24726

Ile Leu Met Gly Leu Phe Arg Arg Ser Lys His Pro Ala Leu Leu Ser  
 20 25 30

gtg gtc atc ttt gtg gtt ttc ctg aag gcg ttg tct gga aat gct gtc 144  
 Val Val Ile Phe Val Val Phe Leu Lys Ala Leu Ser Gly Asn Ala Val  
 35 40 45

ctg atc ctt ctg ata cac tgt gac gcc cac ctc cac agc ccc atg tac 192  
 Leu Ile Leu Leu Ile His Cys Asp Ala His Leu His Ser Pro Met Tyr  
 50 55 60

ttt ttc atc agt caa ttg tct ctc atg gac atg gcg tac att tct gtc 240  
 Phe Phe Ile Ser Gln Leu Ser Leu Met Asp Met Ala Tyr Ile Ser Val  
 65 70 75 80

act gtg ccc aag atg ctc ctg gac cag gtc atg ggt gtg aat aag gtc 288  
 Thr Val Pro Lys Met Leu Leu Asp Gln Val Met Gly Val Asn Lys Val  
 85 90 95

tca gcc cct gag tgt ggg atg cag atg ttc ctc tat ctg aca cta gca 336  
 Ser Ala Pro Glu Cys Gly Met Gln Met Phe Leu Tyr Leu Thr Leu Ala  
 100 105 110

ggt tcg gaa ttt ttc ctt cta gcc acc atg gcc tat gac cgc tac gtg 384  
 Gly Ser Glu Phe Phe Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val  
 115 120 125

gcc atc tgc cat cct ctc cgt tac cct gtc ctc atg aac cat agg gtc 432  
 Ala Ile Cys His Pro Leu Arg Tyr Pro Val Leu Met Asn His Arg Val  
 130 135 140

tgt ctt ttc ctg gca tcg ggc tgc tgg ttc ctg ggc tca gtg gat ggc 480  
 Cys Leu Phe Leu Ala Ser Gly Cys Trp Phe Leu Gly Ser Val Asp Gly  
 145 150 155 160

ttc atg ctc act ccc atc acc atg agc ttc ccc ttc tgc aga tcc tgg 528  
 Phe Met Leu Thr Pro Ile Thr Met Ser Phe Pro Phe Cys Arg Ser Trp  
 165 170 175

gag att cat cat ttc ttc tgt gaa gtc cct gct gta acg atc ctg tcc 576  
 Glu Ile His His Phe Phe Cys Glu Val Pro Ala Val Thr Ile Leu Ser  
 180 185 190

tgc tca gac acc tca ctc tat gag acc ctc atg tac cta tgc tgt gtc 624  
 Cys Ser Asp Thr Ser Leu Tyr Glu Thr Leu Met Tyr Leu Cys Cys Val  
 195 200 205

ctc atg ctc ctc atc cct gtg acg atc att tca agc tcc tat tta ctc 672  
 Leu Met Leu Leu Ile Pro Val Thr Ile Ile Ser Ser Ser Tyr Leu Leu  
 210 215 220

atc ctc ctc acc gtc cac agg atg aac tca gca gag ggc cgg aaa aag 720  
 Ile Leu Leu Thr Val His Arg Met Asn Ser Ala Glu Gly Arg Lys Lys  
 225 230 235 240

gcc ttt gcc acc tgc tcc tcc cac ctg act gtg gtc atc ctc ttc tat 768  
 Ala Phe Ala Thr Cys Ser Ser His Leu Thr Val Val Ile Leu Phe Tyr  
 245 250 255

ggg gct gcc gtc tac acc tac atg ctc ccc agc tcc tac cac acc cct 816  
 Gly Ala Ala Val Tyr Thr Tyr Met Leu Pro Ser Ser Tyr His Thr Pro

260	265	270	
gag aag gac atg atg gta tct gtc ttc tat acc atc ctc act ccg gtg			864
Glu Lys Asp Met Met Val Ser Val Phe Tyr Thr Ile Leu Thr Pro Val			
275	280	285	
ctg aac cct tta atc tat agt ctt agg aat aag gat gtc atg ggg gct			912
Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Met Gly Ala			
290	295	300	
ctg aag aaa atg tta act gtg aga ttc gtc ctt tag			948
Leu Lys Lys Met Leu Thr Val Arg Phe Val Leu			
305	310	315	
<210>	336		
<211>	315		
<212>	PRT		
<213>	Homo Sapiens		
<400>	336		
Met Ala Asn Ile Thr Arg Met Ala Asn His Thr Gly Lys Leu Asp Phe			
1	5	10	15
Ile Leu Met Gly Leu Phe Arg Arg Ser Lys His Pro Ala Leu Leu Ser			
	20	25	30
Val Val Ile Phe Val Val Phe Leu Lys Ala Leu Ser Gly Asn Ala Val			
	35	40	45
Leu Ile Leu Leu Ile His Cys Asp Ala His Leu His Ser Pro Met Tyr			
	50	55	60
Phe Phe Ile Ser Gln Leu Ser Leu Met Asp Met Ala Tyr Ile Ser Val			
65	70	75	80
Thr Val Pro Lys Met Leu Leu Asp Gln Val Met Gly Val Asn Lys Val			
	85	90	95
Ser Ala Pro Glu Cys Gly Met Gln Met Phe Leu Tyr Leu Thr Leu Ala			
	100	105	110
Gly Ser Glu Phe Phe Leu Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val			
	115	120	125
Ala Ile Cys His Pro Leu Arg Tyr Pro Val Leu Met Asn His Arg Val			
	130	135	140
Cys Leu Phe Leu Ala Ser Gly Cys Trp Phe Leu Gly Ser Val Asp Gly			
145	150	155	160

Phe Met Leu Thr Pro Ile Thr Met Ser Phe Pro Phe Cys Arg Ser Trp  
 165 170 175

Glu Ile His His Phe Phe Cys Glu Val Pro Ala Val Thr Ile Leu Ser  
 180 185 190

Cys Ser Asp Thr Ser Leu Tyr Glu Thr Leu Met Tyr Leu Cys Cys Val  
 195 200 205

Leu Met Leu Leu Ile Pro Val Thr Ile Ile Ser Ser Ser Tyr Leu Leu  
 210 215 220

Ile Leu Leu Thr Val His Arg Met Asn Ser Ala Glu Gly Arg Lys Lys  
 225 230 235 240

Ala Phe Ala Thr Cys Ser Ser His Leu Thr Val Val Ile Leu Phe Tyr  
 245 250 255

Gly Ala Ala Val Tyr Thr Tyr Met Leu Pro Ser Ser Tyr His Thr Pro  
 260 265 270

Glu Lys Asp Met Met Val Ser Val Phe Tyr Thr Ile Leu Thr Pro Val  
 275 280 285

Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Met Gly Ala  
 290 295 300

Leu Lys Lys Met Leu Thr Val Arg Phe Val Leu  
 305 310 315

<210> 337  
 <211> 993  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(990)  
 <223>

<400> 337  
 atg gga ctc ttc aga caa tcc aaa cat cca atg gcc aat atc acc tgg 48  
 Met Gly Leu Phe Arg Gln Ser Lys His Pro Met Ala Asn Ile Thr Trp  
 1 5 10 15

atg gcc aac cac act gga tgg tcg gat ttc atc ctg ttg gga ctc ttc 96  
 Met Ala Asn His Thr Gly Trp Ser Asp Phe Ile Leu Leu Gly Leu Phe  
 20 25 30

aga	caa	tcc	aaa	cat	cca	gca	cta	ctt	tgt	gtg	gtc	att	ttt	gtg	gtt	144
Arg	Gln	Ser	Lys	His	Pro	Ala	Leu	Leu	Cys	Val	Val	Ile	Phe	Val	Val	
		35					40					45				
ttc	ctg	atg	gcg	ttg	tct	gga	aat	gct	gtc	ctg	atc	ctt	ctg	ata	cac	192
Phe	Leu	Met	Ala	Leu	Ser	Gly	Asn	Ala	Val	Leu	Ile	Leu	Leu	Ile	His	
	50					55				60						
tgt	gac	gcc	cac	ctc	cac	acc	ccc	atg	tac	ttt	ttc	atc	agt	caa	ttg	240
Cys	Asp	Ala	His	Leu	His	Thr	Pro	Met	Tyr	Phe	Phe	Ile	Ser	Gln	Leu	
65					70					75					80	
tct	ctc	atg	gac	atg	gcg	tac	att	tct	gtc	act	gtg	ccc	aag	atg	ctc	288
Ser	Leu	Met	Asp	Met	Ala	Tyr	Ile	Ser	Val	Thr	Val	Pro	Lys	Met	Leu	
				85					90					95		
ctg	gac	cag	gtc	atg	ggg	gtg	aat	aag	atc	tca	gcc	cct	gag	tgt	ggg	336
Leu	Asp	Gln	Val	Met	Gly	Val	Asn	Lys	Ile	Ser	Ala	Pro	Glu	Cys	Gly	
		100						105					110			
atg	cag	atg	ttc	ttc	tac	gtg	aca	cta	gca	ggg	tca	gaa	ttt	ttc	ctt	384
Met	Gln	Met	Phe	Phe	Tyr	Val	Thr	Leu	Ala	Gly	Ser	Glu	Phe	Phe	Leu	
		115					120					125				
cta	gcc	acc	atg	gcc	tat	gac	cgc	tac	gtg	gcc	atc	tgc	cat	cct	ctc	432
Leu	Ala	Thr	Met	Ala	Tyr	Asp	Arg	Tyr	Val	Ala	Ile	Cys	His	Pro	Leu	
		130				135					140					
cgt	tac	cct	gtc	ctc	atg	aac	cat	agg	gtg	tgt	ctc	ttc	ctg	tca	tca	480
Arg	Tyr	Pro	Val	Leu	Met	Asn	His	Arg	Val	Cys	Leu	Phe	Leu	Ser	Ser	
145					150					155					160	
ggc	tgc	tgg	ttc	ctg	ggc	tca	gtg	gat	ggc	ttc	aca	ttc	act	ccc	atc	528
Gly	Cys	Trp	Phe	Leu	Gly	Ser	Val	Asp	Gly	Phe	Thr	Phe	Thr	Pro	Ile	
			165						170					175		
acc	atg	acc	ttc	ccc	ttc	cgt	gga	tcc	cgg	gag	att	cat	cat	ttc	ttc	576
Thr	Met	Thr	Phe	Pro	Phe	Arg	Gly	Ser	Arg	Glu	Ile	His	His	Phe	Phe	
			180					185						190		
tgt	gaa	gtt	cct	gct	gta	ttg	aat	ctc	tcc	tgc	tca	gac	acc	tca	ctc	624
Cys	Glu	Val	Pro	Ala	Val	Leu	Asn	Leu	Ser	Cys	Ser	Asp	Thr	Ser	Leu	
		195					200					205				
tat	gag	att	ttc	atg	tac	ttg	tgc	tgt	gtc	ctc	atg	ctc	ctc	atc	cct	672
Tyr	Glu	Ile	Phe	Met	Tyr	Leu	Cys	Cys	Val	Leu	Met	Leu	Leu	Ile	Pro	
		210				215					220					
gtg	gtg	atc	att	tca	agc	tcc	tat	tta	ctc	atc	ctc	ctc	acc	atc	cac	720
Val	Val	Ile	Ile	Ser	Ser	Ser	Tyr	Leu	Leu	Ile	Leu	Leu	Thr	Ile	His	
					230					235					240	
ggg	atg	aac	tca	gca	gag	ggc	cgg	aaa	aag	gcc	ttt	gcc	acc	tgc	tcc	768
Gly	Met	Asn	Ser	Ala	Glu	Gly	Arg	Lys	Lys	Ala	Phe	Ala	Thr	Cys	Ser	
				245					250					255		
tcc	cac	ctg	act	gtg	gtc	atc	ctc	ttc	tat	ggg	gct	gcc	atc	tac	acc	816
Ser	His	Leu	Thr	Val	Val	Ile	Leu	Phe	Tyr	Gly	Ala	Ala	Ile	Tyr	Thr	
			260					265						270		
tac	atg	ctc	ccc	agc	tcc	tac	cac	acc	cct	gag	aag	gac	atg	atg	gta	864

Tyr Met Leu Pro Ser Ser Tyr His Thr Pro Glu Lys Asp Met Met Val  
 275 280 285  
 tct gtc ttc tat acc atc ctc act cca gtg gtg aac cct tta atc tat 912  
 Ser Val Phe Tyr Thr Ile Leu Thr Pro Val Val Asn Pro Leu Ile Tyr  
 290 295 300  
 agt ctt agg aat aag gat gtc atg ggg gct ctg aag aaa atg tta aca 960  
 Ser Leu Arg Asn Lys Asp Val Met Gly Ala Leu Lys Lys Met Leu Thr  
 305 310 315 320  
 gtg gaa cct gcc ttt caa aaa gct atg gag tag 993  
 Val Glu Pro Ala Phe Gln Lys Ala Met Glu  
 325 330

<210> 338  
 <211> 330  
 <212> PRT  
 <213> Homo Sapiens

<400> 338

Met Gly Leu Phe Arg Gln Ser Lys His Pro Met Ala Asn Ile Thr Trp  
 1 5 10 15

Met Ala Asn His Thr Gly Trp Ser Asp Phe Ile Leu Leu Gly Leu Phe  
 20 25 30

Arg Gln Ser Lys His Pro Ala Leu Leu Cys Val Val Ile Phe Val Val  
 35 40 45

Phe Leu Met Ala Leu Ser Gly Asn Ala Val Leu Ile Leu Leu Ile His  
 50 55 60

Cys Asp Ala His Leu His Thr Pro Met Tyr Phe Phe Ile Ser Gln Leu  
 65 70 75 80

Ser Leu Met Asp Met Ala Tyr Ile Ser Val Thr Val Pro Lys Met Leu  
 85 90 95

Leu Asp Gln Val Met Gly Val Asn Lys Ile Ser Ala Pro Glu Cys Gly  
 100 105 110

Met Gln Met Phe Phe Tyr Val Thr Leu Ala Gly Ser Glu Phe Phe Leu  
 115 120 125

Leu Ala Thr Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His Pro Leu  
 130 135 140

Arg Tyr Pro Val Leu Met Asn His Arg Val Cys Leu Phe Leu Ser Ser  
 145 150 155 160

Gly Cys Trp Phe Leu Gly Ser Val Asp Gly Phe Thr Phe Thr Pro Ile  
 165 170 175

Thr Met Thr Phe Pro Phe Arg Gly Ser Arg Glu Ile His His Phe Phe  
 180 185 190

Cys Glu Val Pro Ala Val Leu Asn Leu Ser Cys Ser Asp Thr Ser Leu  
 195 200 205

Tyr Glu Ile Phe Met Tyr Leu Cys Cys Val Leu Met Leu Leu Ile Pro  
 210 215 220

Val Val Ile Ile Ser Ser Ser Tyr Leu Leu Ile Leu Leu Thr Ile His  
 225 230 235 240

Gly Met Asn Ser Ala Glu Gly Arg Lys Lys Ala Phe Ala Thr Cys Ser  
 245 250 255

Ser His Leu Thr Val Val Ile Leu Phe Tyr Gly Ala Ala Ile Tyr Thr  
 260 265 270

Tyr Met Leu Pro Ser Ser Tyr His Thr Pro Glu Lys Asp Met Met Val  
 275 280 285

Ser Val Phe Tyr Thr Ile Leu Thr Pro Val Val Asn Pro Leu Ile Tyr  
 290 295 300

Ser Leu Arg Asn Lys Asp Val Met Gly Ala Leu Lys Lys Met Leu Thr  
 305 310 315 320

Val Glu Pro Ala Phe Gln Lys Ala Met Glu  
 325 330

<210> 339  
 <211> 940  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1) .. (939)  
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<400> 339  
 atg tgc tca ggg aat cag act tct cag aat caa aca gca agc act gat  
 Met Cys Ser Gly Asn Gln Thr Ser Gln Asn Gln Thr Ala Ser Thr Asp  
 1 5 10 15

48

ttc acc ctc acg gga ctc ttt gct gag agc aag cat gct gcc ctc ctc 96  
 Phe Thr Leu Thr Gly Leu Phe Ala Glu Ser Lys His Ala Ala Leu Leu  
 20 25 30

tac acc gtg acc ttc ctt ctt ttc ttg atg gcc ctc act ggg aat gcc 144  
 Tyr Thr Val Thr Phe Leu Leu Phe Leu Met Ala Leu Thr Gly Asn Ala  
 35 40 45

ctc ctc atc ctc ctc atc cac tca gag ccc cgc ctc cac acc ccc atg 192  
 Leu Leu Ile Leu Leu Ile His Ser Glu Pro Arg Leu His Thr Pro Met  
 50 55 60

tac ttc ttc atc agc cag ctc gcg ctc atg gat ctc atg tac cta tgc 240  
 Tyr Phe Phe Ile Ser Gln Leu Ala Leu Met Asp Leu Met Tyr Leu Cys  
 65 70 75 80

gtg act gtg ccc aag atg ctt gtg ggc cag gtc act gga gat gat acc 288  
 Val Thr Val Pro Lys Met Leu Val Gly Gln Val Thr Gly Asp Asp Thr  
 85 90 95

att tcc ccg tca ggc tgt ggg atc cag atg ttc ttc tac ctg acc ctg 336  
 Ile Ser Pro Ser Gly Cys Gly Ile Gln Met Phe Phe Tyr Leu Thr Leu  
 100 105 110

gct gga gct gag gtt ttc ctc ctg gct gcc atg gcc tat gac cga tat 384  
 Ala Gly Ala Glu Val Phe Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr  
 115 120 125

gct gct gtt tgc aga cct ctc cat tac cca ctg ctg atg aac cag agg 432  
 Ala Ala Val Cys Arg Pro Leu His Tyr Pro Leu Leu Met Asn Gln Arg  
 130 135 140

gtg tgc cag ctc ctg gtg tca gcc tgc tgg gtt ttg gga atg gtt gat 480  
 Val Cys Gln Leu Leu Val Ser Ala Cys Trp Val Leu Gly Met Val Asp  
 145 150 155 160

ggt ttg ttg ctc acc ccc att acc atg agc ttc ccc ttt tgc cag tct 528  
 Gly Leu Leu Leu Thr Pro Ile Thr Met Ser Phe Pro Phe Cys Gln Ser  
 165 170 175

agg aaa atc ctg agt ttt ttc tgt gag act cct gcc ctg ctg aag ctc 576  
 Arg Lys Ile Leu Ser Phe Phe Cys Glu Thr Pro Ala Leu Leu Lys Leu  
 180 185 190

tcc tgc tct gac gtc tcc ctc tat aag acg ctc atg tac ctg tgc tgc 624  
 Ser Cys Ser Asp Val Ser Leu Tyr Lys Thr Leu Met Tyr Leu Cys Cys  
 195 200 205

atc ctc atg ctt ctc gcc ccc atc atg gtc atc tcc agc tca tac acc 672  
 Ile Leu Met Leu Leu Ala Pro Ile Met Val Ile Ser Ser Ser Tyr Thr  
 210 215 220

ctc atc ctg cat ctc atc cac agg atg aat tct gcc gcc ggc cac agg 720  
 Leu Ile Leu His Leu Ile His Arg Met Asn Ser Ala Ala Gly His Arg  
 225 230 235 240

aag gcc ttg gcc acc tgc tcc tcc cac atg atc ata gtg ctg ctg ctc 768  
 Lys Ala Leu Ala Thr Cys Ser Ser His Met Ile Ile Val Leu Leu Leu  
 245 250 255



ttc ggt gct tcc ttc tac acc tac atg ctc ccg agt tcc tac cac aca 816  
 Phe Gly Ala Ser Phe Tyr Thr Tyr Met Leu Pro Ser Ser Tyr His Thr  
                   260                                  265                                  270

gct gag cag gac atg atg gtg tct gcc ttt tac acc atc ttc act cct 864  
 Ala Glu Gln Asp Met Met Val Ser Ala Phe Tyr Thr Ile Phe Thr Pro  
                   275                                  280                                  285

gtg ctg aac ccc ctc att tac agt ctc cgc aac aaa gat gtc acc agg 912  
 Val Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Thr Arg  
                   290                                  295                                  300

gct atg agg agc atg atg cag tca aga a 940  
 Ala Met Arg Ser Met Met Gln Ser Arg  
                   305                                  310

<210> 340

<211> 313

<212> PRT

<213> Homo Sapiens

<400> 340

Met Cys Ser Gly Asn Gln Thr Ser Gln Asn Gln Thr Ala Ser Thr Asp  
 1                  5                                  10                                  15

Phe Thr Leu Thr Gly Leu Phe Ala Glu Ser Lys His Ala Ala Leu Leu  
                   20                                  25                                  30

Tyr Thr Val Thr Phe Leu Leu Phe Leu Met Ala Leu Thr Gly Asn Ala  
                   35                                  40                                  45

Leu Leu Ile Leu Leu Ile His Ser Glu Pro Arg Leu His Thr Pro Met  
                   50                                  55                                  60

Tyr Phe Phe Ile Ser Gln Leu Ala Leu Met Asp Leu Met Tyr Leu Cys  
 65                                  70                                  75                                  80

Val Thr Val Pro Lys Met Leu Val Gly Gln Val Thr Gly Asp Asp Thr  
                   85                                  90                                  95

Ile Ser Pro Ser Gly Cys Gly Ile Gln Met Phe Phe Tyr Leu Thr Leu  
                   100                                  105                                  110

Ala Gly Ala Glu Val Phe Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr  
                   115                                  120                                  125

Ala Ala Val Cys Arg Pro Leu His Tyr Pro Leu Leu Met Asn Gln Arg  
                   130                                  135                                  140

Val Cys Gln Leu Leu Val Ser Ala Cys Trp Val Leu Gly Met Val Asp

145                                      150                                      155                                      160  
 Gly Leu Leu Leu Thr Pro Ile Thr Met Ser Phe Pro Phe Cys Gln Ser  
    165                                      170                                      175  
 Arg Lys Ile Leu Ser Phe Phe Cys Glu Thr Pro Ala Leu Leu Lys Leu  
    180                                      185                                      190  
 Ser Cys Ser Asp Val Ser Leu Tyr Lys Thr Leu Met Tyr Leu Cys Cys  
    195                                      200                                      205  
 Ile Leu Met Leu Leu Ala Pro Ile Met Val Ile Ser Ser Ser Tyr Thr  
    210                                      215                                      220  
 Leu Ile Leu His Leu Ile His Arg Met Asn Ser Ala Ala Gly His Arg  
    225                                      230                                      235                                      240  
 Lys Ala Leu Ala Thr Cys Ser Ser His Met Ile Ile Val Leu Leu Leu  
    245                                      250                                      255  
 Phe Gly Ala Ser Phe Tyr Thr Tyr Met Leu Pro Ser Ser Tyr His Thr  
    260                                      265                                      270  
 Ala Glu Gln Asp Met Met Val Ser Ala Phe Tyr Thr Ile Phe Thr Pro  
    275                                      280                                      285  
 Val Leu Asn Pro Leu Ile Tyr Ser Leu Arg Asn Lys Asp Val Thr Arg  
    290                                      295                                      300  
 Ala Met Arg Ser Met Met Gln Ser Arg  
    305                                      310

<210> 341  
 <211> 939  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(936)  
 <223>

<400> 341  
 atg ccc aat tca acc acc gtg atg gaa ttt ctc ctc atg agg ttt tct 48  
 Met Pro Asn Ser Thr Thr Val Met Glu Phe Leu Leu Met Arg Phe Ser  
    5                                      10                                      15  
 gat gtg tgg aca cta cag att tta cat tct gca tcc ttc ttt atg ttg 96  
 Asp Val Trp Thr Leu Gln Ile Leu His Ser Ala Ser Phe Phe Met Leu

20	25	30	
tat ttg gta act cta atg gga aac atc ctc att gtg acc gtc acc acc			144
Tyr Leu Val Thr Leu Met Gly Asn Ile Leu Ile Val Thr Val Thr Thr			
35	40	45	
tgt gac agc agc ctt cac atg ccc atg tac ttc ttc ctc agg aat ctg			192
Cys Asp Ser Ser Leu His Met Pro Met Tyr Phe Phe Leu Arg Asn Leu			
50	55	60	
tct atc ttg gat gcc tgc tac att tct gtt aca gtc cct acc tca tgt			240
Ser Ile Leu Asp Ala Cys Tyr Ile Ser Val Thr Val Pro Thr Ser Cys			
65	70	75	80
gtc aat tcc cta ctg gac agc acc acc att tct aag gcg gga tgt gta			288
Val Asn Ser Leu Leu Asp Ser Thr Thr Ile Ser Lys Ala Gly Cys Val			
85	90	95	
gct cag gtc ttc ctc gtg gtt ttt ttt gta tat gtg gag ctt ctg ttt			336
Ala Gln Val Phe Leu Val Val Phe Phe Val Tyr Val Glu Leu Leu Phe			
100	105	110	
ctc acc att atg gct cat gac cgc tat gtg gct gtc tgc cag cca ctt			384
Leu Thr Ile Met Ala His Asp Arg Tyr Val Ala Val Cys Gln Pro Leu			
115	120	125	
cac tac cct gtg atc gtg aac tct cga atc tgc atc cag atg aca ctg			432
His Tyr Pro Val Ile Val Asn Ser Arg Ile Cys Ile Gln Met Thr Leu			
130	135	140	
gcc tcc cta ctc agt ggt ctt gtc tat gca ggc atg cac act ggc agc			480
Ala Ser Leu Leu Ser Gly Leu Val Tyr Ala Gly Met His Thr Gly Ser			
145	150	155	160
aca ttc cag ctg ccc ttc tgt cgg tcc aac gtt att cat caa ttc ttc			528
Thr Phe Gln Leu Pro Phe Cys Arg Ser Asn Val Ile His Gln Phe Phe			
165	170	175	
tgt gac atc ccc tct ctg ctg aag ctc tct tgc tct gac acc ttc agc			576
Cys Asp Ile Pro Ser Leu Leu Lys Leu Ser Cys Ser Asp Thr Phe Ser			
180	185	190	
aat gag gtc atg att gtt gtc tct gct ctg ggg gta ggt ggc ggc tgt			624
Asn Glu Val Met Ile Val Val Ser Ala Leu Gly Val Gly Gly Gly Cys			
195	200	205	
ttc atc ttt atc atc agg tct tac att cac atc ttt tgc acc gtg ctc			672
Phe Ile Phe Ile Ile Arg Ser Tyr Ile His Ile Phe Ser Thr Val Leu			
210	215	220	
ggg ttt cca aga gga gca gac aga aca aag gcc ttt tcc acc tgc atc			720
Gly Phe Pro Arg Gly Ala Asp Arg Thr Lys Ala Phe Ser Thr Cys Ile			
225	230	235	240
cct cac atc ctg gtg gtg tca gtc ttc ctc agt tca tgc tct tct gtg			768
Pro His Ile Leu Val Val Ser Val Phe Leu Ser Ser Cys Ser Ser Val			
245	250	255	
tac ctc agg cca cct gcg ata cct gca gcc acc cag gat ctg atc ctt			816
Tyr Leu Arg Pro Pro Ala Ile Pro Ala Ala Thr Gln Asp Leu Ile Leu			
260	265	270	

tct ggt ttt tat tcc ata atg cct ccc ctc ttt aac cct att att tac 864  
 Ser Gly Phe Tyr Ser Ile Met Pro Pro Leu Phe Asn Pro Ile Ile Tyr  
           275                          280                          285

agt ctt aga aat aag caa ata aag gtg gcc atc aag aaa atc atg aag 912  
 Ser Leu Arg Asn Lys Gln Ile Lys Val Ala Ile Lys Lys Ile Met Lys  
           290                          295                          300

aga att ttt tat tca gaa aat gtg taa 939  
 Arg Ile Phe Tyr Ser Glu Asn Val  
           305                          310

<210> 342  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 342

Met Pro Asn Ser Thr Thr Val Met Glu Phe Leu Leu Met Arg Phe Ser  
           1                          5                          10                          15

Asp Val Trp Thr Leu Gln Ile Leu His Ser Ala Ser Phe Phe Met Leu  
           20                          25                          30

Tyr Leu Val Thr Leu Met Gly Asn Ile Leu Ile Val Thr Val Thr Thr  
           35                          40                          45

Cys Asp Ser Ser Leu His Met Pro Met Tyr Phe Phe Leu Arg Asn Leu  
           50                          55                          60

Ser Ile Leu Asp Ala Cys Tyr Ile Ser Val Thr Val Pro Thr Ser Cys  
           65                          70                          75                          80

Val Asn Ser Leu Leu Asp Ser Thr Thr Ile Ser Lys Ala Gly Cys Val  
           85                          90                          95

Ala Gln Val Phe Leu Val Val Phe Phe Val Tyr Val Glu Leu Leu Phe  
           100                          105                          110

Leu Thr Ile Met Ala His Asp Arg Tyr Val Ala Val Cys Gln Pro Leu  
           115                          120                          125

His Tyr Pro Val Ile Val Asn Ser Arg Ile Cys Ile Gln Met Thr Leu  
           130                          135                          140

Ala Ser Leu Leu Ser Gly Leu Val Tyr Ala Gly Met His Thr Gly Ser  
           145                          150                          155                          160

Thr Phe Gln Leu Pro Phe Cys Arg Ser Asn Val Ile His Gln Phe Phe  
 165 170 175

Cys Asp Ile Pro Ser Leu Leu Lys Leu Ser Cys Ser Asp Thr Phe Ser  
 180 185 190

Asn Glu Val Met Ile Val Val Ser Ala Leu Gly Val Gly Gly Gly Cys  
 195 200 205

Phe Ile Phe Ile Ile Arg Ser Tyr Ile His Ile Phe Ser Thr Val Leu  
 210 215 220

Gly Phe Pro Arg Gly Ala Asp Arg Thr Lys Ala Phe Ser Thr Cys Ile  
 225 230 235 240

Pro His Ile Leu Val Val Ser Val Phe Leu Ser Ser Cys Ser Ser Val  
 245 250 255

Tyr Leu Arg Pro Pro Ala Ile Pro Ala Ala Thr Gln Asp Leu Ile Leu  
 260 265 270

Ser Gly Phe Tyr Ser Ile Met Pro Pro Leu Phe Asn Pro Ile Ile Tyr  
 275 280 285

Ser Leu Arg Asn Lys Gln Ile Lys Val Ala Ile Lys Lys Ile Met Lys  
 290 295 300

Arg Ile Phe Tyr Ser Glu Asn Val  
 305 310

<210> 343  
 <211> 942  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(939)  
 <223>

<400> 343  
 atg ggg cag acc aac gta acc tcc tgg agg gat ttt gtc ttc ctg ggc 48  
 Met Gly Gln Thr Asn Val Thr Ser Trp Arg Asp Phe Val Phe Leu Gly  
 1 5 10 15  
 ttc tcc agt tct ggg gag ttg cag ctc ctt ctc ttt gcc ttg ttc ctc 96  
 Phe Ser Ser Ser Gly Glu Leu Gln Leu Leu Phe Ala Leu Phe Leu  
 20 25 30  
 tct ctg tat cta gtc act ctg acc agc aat gtc ttc att atc ata gcc 144

512

275                      280                      285  
 gtt tat agt cta agg act agg gct ata cag aca gct ctg agg aat gct                      912  
 Val Tyr Ser Leu Arg Thr Arg Ala Ile Gln Thr Ala Leu Arg Asn Ala  
     290                      295                      300  
  
 ttc aga ggg aga ttg ctg ggt aaa gga tga                      942  
 Phe Arg Gly Arg Leu Leu Gly Lys Gly  
     305                      310  
  
 <210> 344  
 <211> 313  
 <212> PRT  
 <213> Homo Sapiens  
  
 <400> 344  
 Met Gly Gln Thr Asn Val Thr Ser Trp Arg Asp Phe Val Phe Leu Gly  
     1                      5                      10                      15  
  
 Phe Ser Ser Ser Gly Glu Leu Gln Leu Leu Leu Phe Ala Leu Phe Leu  
                     20                      25                      30  
  
 Ser Leu Tyr Leu Val Thr Leu Thr Ser Asn Val Phe Ile Ile Ile Ala  
                     35                      40                      45  
  
 Ile Arg Leu Asp Ser His Leu His Thr Pro Met Tyr Leu Phe Leu Ser  
                     50                      55                      60  
  
 Phe Leu Ser Phe Ser Glu Thr Cys Tyr Thr Leu Gly Ile Ile Pro Arg  
     65                      70                      75                      80  
  
 Met Leu Ser Gly Leu Ala Gly Gly Asp Gln Ala Ile Ser Tyr Val Gly  
                     85                      90                      95  
  
 Cys Ala Ala Gln Met Phe Phe Ser Ala Ser Trp Ala Cys Thr Asn Cys  
                     100                      105                      110  
  
 Phe Leu Leu Ala Ala Met Gly Phe Asp Arg Tyr Val Ala Ile Cys Ala  
                     115                      120                      125  
  
 Pro Leu His Tyr Ala Ser His Met Asn Pro Thr Leu Cys Ala Gln Leu  
                     130                      135                      140  
  
 Val Ile Thr Ser Phe Leu Thr Gly Tyr Leu Phe Gly Leu Gly Met Thr  
     145                      150                      155                      160  
  
 Leu Val Ile Phe His Leu Ser Phe Cys Ser Ser His Glu Ile Gln His  
                     165                      170                      175

Phe Phe Cys Asp Thr Pro Pro Val Leu Ser Leu Ala Cys Gly Asp Thr  
 180 185 190

Gly Pro Ser Glu Leu Arg Ile Phe Ile Leu Ser Leu Leu Val Leu Leu  
 195 200 205

Val Ser Phe Phe Phe Ile Thr Ile Ser Tyr Ala Tyr Ile Leu Ala Ala  
 210 215 220

Ile Leu Arg Ile Pro Ser Ala Glu Gly Gln Lys Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ala Ser His Leu Thr Val Val Ile Ile His Tyr Gly Cys Ala Ser  
 245 250 255

Phe Val Tyr Leu Arg Pro Lys Ala Ser Tyr Ser Leu Glu Arg Asp Gln  
 260 265 270

Leu Ile Ala Met Thr Tyr Thr Val Val Thr Pro Leu Leu Asn Pro Ile  
 275 280 285

Val Tyr Ser Leu Arg Thr Arg Ala Ile Gln Thr Ala Leu Arg Asn Ala  
 290 295 300

Phe Arg Gly Arg Leu Leu Gly Lys Gly  
 305 310

<210> 345  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1)..(972)  
 <223>

<400> 345  
 atg gag agc ccc aat cga acc acc att cag gag ttt atc ttc tcc gct  
 Met Glu Ser Pro Asn Arg Thr Thr Ile Gln Glu Phe Ile Phe Ser Ala  
 1 5 10 15

ttc cct tat tcc tgg gtt aag tct gtt gtc tgc ttt gtt cca ctg ctc  
 Phe Pro Tyr Ser Trp Val Lys Ser Val Val Cys Phe Val Pro Leu Leu  
 20 25 30

ttc atc tat gct ttc att gtt gtt gga aac ctg gtc atc atc aca gtg  
 Phe Ile Tyr Ala Phe Ile Val Val Gly Asn Leu Val Ile Ile Thr Val  
 35 40 45

48

96

144



gtc cag ttg aat act cac ctc cac act ccc atg tat act ttt atc agt	192
Val Gln Leu Asn Thr His Leu His Thr Pro Met Tyr Thr Phe Ile Ser	
50 55 60	
gct ctt tct ttc ctg gag att tgg tat acc aca gcc aca atc cca aag	240
Ala Leu Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Thr Ile Pro Lys	
65 70 75 80	
atg ctg tct agc ctg ctt agt gag agg agc att tcc ttc aat ggt tgt	288
Met Leu Ser Ser Leu Leu Ser Glu Arg Ser Ile Ser Phe Asn Gly Cys	
85 90 95	
ctc ctg cag atg tat ttc ttc cat tcc acc ggc atc tgt gag gtg tgt	336
Leu Leu Gln Met Tyr Phe Phe His Ser Thr Gly Ile Cys Glu Val Cys	
100 105 110	
ctc ttg aca gtt atg gcc ttt gac cac tac ctg gcc ata tgc agc cct	384
Leu Leu Thr Val Met Ala Phe Asp His Tyr Leu Ala Ile Cys Ser Pro	
115 120 125	
ctt cat tat ccc tct atc atg acc ccc aag cta tgt acc caa ctg act	432
Leu His Tyr Pro Ser Ile Met Thr Pro Lys Leu Cys Thr Gln Leu Thr	
130 135 140	
tta agt tgc tgt gtt tgt ggc ttt atc aca ccc ctt cct gag att gcc	480
Leu Ser Cys Cys Val Cys Gly Phe Ile Thr Pro Leu Pro Glu Ile Ala	
145 150 155 160	
tgg atc tct aca ctg cca ttt tgt ggt tgc aat cac ctt gaa cat atc	528
Trp Ile Ser Thr Leu Pro Phe Cys Gly Ser Asn His Leu Glu His Ile	
165 170 175	
ttc tgt gac ttc ctc cca gtg ctg cgt ctg gcc tgc aca gac aca cga	576
Phe Cys Asp Phe Leu Pro Val Leu Arg Leu Ala Cys Thr Asp Thr Arg	
180 185 190	
gcc atc gtc atg att cag gta gtg gat gtc att cat gca gtg gag att	624
Ala Ile Val Met Ile Gln Val Val Asp Val Ile His Ala Val Glu Ile	
195 200 205	
att aca gct gtg atg ctc atc ttc atg tcc tac gat ggt att gtg gct	672
Ile Thr Ala Val Met Leu Ile Phe Met Ser Tyr Asp Gly Ile Val Ala	
210 215 220	
gta att cta cgt att cat tca gct gga ggc cgc cgc aca gca ttt tcc	720
Val Ile Leu Arg Ile His Ser Ala Gly Gly Arg Arg Thr Ala Phe Ser	
225 230 235 240	
acg tgt gtc tct cac ttc att gtc ttt tgc ctc ttc ttt ggc agt gtg	768
Thr Cys Val Ser His Phe Ile Val Phe Ser Leu Phe Phe Gly Ser Val	
245 250 255	
act ctc atg tac cta cgc ttc tct gcc acc tac tct ttg ttc tgg gat	816
Thr Leu Met Tyr Leu Arg Phe Ser Ala Thr Tyr Ser Leu Phe Trp Asp	
260 265 270	
ata gcc att gct ctg gcc ttt gca gtt ttg tct ccc ttc ttc aac ccc	864
Ile Ala Ile Ala Leu Ala Phe Ala Val Leu Ser Pro Phe Phe Asn Pro	
275 280 285	
att atc tat agc ctg agg aat aaa gaa ata aaa gaa gct ata aaa aag	912

Ile Ile Tyr Ser Leu Arg Asn Lys Glu Ile Lys Glu Ala Ile Lys Lys  
 290 295 300  
 cac ata ggt caa gct aag ata ttt ttt tcc gta aga cca ggg acc tca 960  
 His Ile Gly Gln Ala Lys Ile Phe Phe Ser Val Arg Pro Gly Thr Ser  
 305 310 315 320  
 agt aag ata ttt tag 975  
 Ser Lys Ile Phe

<210> 346  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 346

Met Glu Ser Pro Asn Arg Thr Thr Ile Gln Glu Phe Ile Phe Ser Ala  
 1 5 10 15

Phe Pro Tyr Ser Trp Val Lys Ser Val Val Cys Phe Val Pro Leu Leu  
 20 25 30

Phe Ile Tyr Ala Phe Ile Val Val Gly Asn Leu Val Ile Ile Thr Val  
 35 40 45

Val Gln Leu Asn Thr His Leu His Thr Pro Met Tyr Thr Phe Ile Ser  
 50 55 60

Ala Leu Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Thr Ile Pro Lys  
 65 70 75 80

Met Leu Ser Ser Leu Leu Ser Glu Arg Ser Ile Ser Phe Asn Gly Cys  
 85 90 95

Leu Leu Gln Met Tyr Phe Phe His Ser Thr Gly Ile Cys Glu Val Cys  
 100 105 110

Leu Leu Thr Val Met Ala Phe Asp His Tyr Leu Ala Ile Cys Ser Pro  
 115 120 125

Leu His Tyr Pro Ser Ile Met Thr Pro Lys Leu Cys Thr Gln Leu Thr  
 130 135 140

Leu Ser Cys Cys Val Cys Gly Phe Ile Thr Pro Leu Pro Glu Ile Ala  
 145 150 155 160

Trp Ile Ser Thr Leu Pro Phe Cys Gly Ser Asn His Leu Glu His Ile  
 165 170 175

Phe Cys Asp Phe Leu Pro Val Leu Arg Leu Ala Cys Thr Asp Thr Arg  
 180 185 190

Ala Ile Val Met Ile Gln Val Val Asp Val Ile His Ala Val Glu Ile  
 195 200 205

Ile Thr Ala Val Met Leu Ile Phe Met Ser Tyr Asp Gly Ile Val Ala  
 210 215 220

Val Ile Leu Arg Ile His Ser Ala Gly Gly Arg Arg Thr Ala Phe Ser  
 225 230 235 240

Thr Cys Val Ser His Phe Ile Val Phe Ser Leu Phe Phe Gly Ser Val  
 245 250 255

Thr Leu Met Tyr Leu Arg Phe Ser Ala Thr Tyr Ser Leu Phe Trp Asp  
 260 265 270

Ile Ala Ile Ala Leu Ala Phe Ala Val Leu Ser Pro Phe Phe Asn Pro  
 275 280 285

Ile Ile Tyr Ser Leu Arg Asn Lys Glu Ile Lys Glu Ala Ile Lys Lys  
 290 295 300

His Ile Gly Gln Ala Lys Ile Phe Phe Ser Val Arg Pro Gly Thr Ser  
 305 310 315 320

Ser Lys Ile Phe

<210> 347  
 <211> 954  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(951)  
 <223>

<400> 347  
 atg gat caa tac aac cat tca agc ctg gct gaa ttt gtg ttc ctt ggc 48  
 Met Asp Gln Tyr Asn His Ser Ser Leu Ala Glu Phe Val Phe Leu Gly  
 1 5 10 15  
 ttt gcc agt gtg ggc tat gtc agg ggc tgg ctt ttt gtc ctg ctg cta 96  
 Phe Ala Ser Val Gly Tyr Val Arg Gly Trp Leu Phe Val Leu Leu Leu  
 20 25 30

ttg gca tac ctg ttc acc atc tgt ggt aac atg ctc atc ttc tca gtc 144  
 Leu Ala Tyr Leu Phe Thr Ile Cys Gly Asn Met Leu Ile Phe Ser Val  
 35 40 45

atc cga ctg gat gca gct ctg cac aca cct atg tac cac ttt gtc agt 192  
 Ile Arg Leu Asp Ala Ala Leu His Thr Pro Met Tyr His Phe Val Ser  
 50 55 60

gtt ctt tcc ttc ttg gag ttg tgg tat aca gct acc act atc cct aag 240  
 Val Leu Ser Phe Leu Glu Leu Trp Tyr Thr Ala Thr Thr Ile Pro Lys  
 65 70 75 80

atg ttg tct aat att ctc agt gag aag aaa acc att tct ttt gca gga 288  
 Met Leu Ser Asn Ile Leu Ser Glu Lys Lys Thr Ile Ser Phe Ala Gly  
 85 90 95

tgc ctc ctt cag acc tac ttc ttc cac tcc ttg gga gcg tct gaa tgc 336  
 Cys Leu Leu Gln Thr Tyr Phe Phe His Ser Leu Gly Ala Ser Glu Cys  
 100 105 110

tac ctt ctt aca gcc atg gcc tat gat aga tac ctg gcc att tgt cgg 384  
 Tyr Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Arg  
 115 120 125

ccc ctc cac tac cct ata att atg acc acc aca ctc tgt gcc aag atg 432  
 Pro Leu His Tyr Pro Ile Ile Met Thr Thr Thr Leu Cys Ala Lys Met  
 130 135 140

gct gct gct tgt tgg act tgt ggc ttc ctg tgt ccc att tct gag gtc 480  
 Ala Ala Ala Cys Trp Thr Cys Gly Phe Leu Cys Pro Ile Ser Glu Val  
 145 150 155 160

atc ctt gcc tcc cag ctc cca ttt tgt gct tac aat gaa atc caa cac 528  
 Ile Leu Ala Ser Gln Leu Pro Phe Cys Ala Tyr Asn Glu Ile Gln His  
 165 170 175

att ttc tgt gac ttt cca cct ttg ctg agc ttg gcc tgc aag gac aca 576  
 Ile Phe Cys Asp Phe Pro Pro Leu Leu Ser Leu Ala Cys Lys Asp Thr  
 180 185 190

tct gct aac att ctg gtg gac ttt gcc att aat gct ttc ata att ctt 624  
 Ser Ala Asn Ile Leu Val Asp Phe Ala Ile Asn Ala Phe Ile Ile Leu  
 195 200 205

atc act ttc ttc ttt atc atg att tct tat gca agg atc att ggg gct 672  
 Ile Thr Phe Phe Phe Ile Met Ile Ser Tyr Ala Arg Ile Ile Gly Ala  
 210 215 220

gtg ctg aag ata aaa aca gca tca gga aga aag aag gcc ttt tct acc 720  
 Val Leu Lys Ile Lys Thr Ala Ser Gly Arg Lys Lys Ala Phe Ser Thr  
 225 230 235 240

tgt gcc tca cat ctt gct gtg gtc ctc atc ttc ttt ggg agc atc atc 768  
 Cys Ala Ser His Leu Ala Val Val Leu Ile Phe Phe Gly Ser Ile Ile  
 245 250 255

ttc atg tat gtg cgg cta aag aag agc tat tcc ctg acc ctt gac cga 816  
 Phe Met Tyr Val Arg Leu Lys Lys Ser Tyr Ser Leu Thr Leu Asp Arg  
 260 265 270

aca ctt gct ata gtt tac tcc gta cta aca cca atg gtc aat cca att 864  
 Thr Leu Ala Ile Val Tyr Ser Val Leu Thr Pro Met Val Asn Pro Ile  
           275                                  280                                  285

atc tac agt ctt cgt aac aag gaa atc att aaa gct atc aag agg acc 912  
 Ile Tyr Ser Leu Arg Asn Lys Glu Ile Ile Lys Ala Ile Lys Arg Thr  
           290                                  295                                  300

atc ttc cag aag gga gat aaa gct agt ctt gct cat ctt tga 954  
 Ile Phe Gln Lys Gly Asp Lys Ala Ser Leu Ala His Leu  
           305                                  310                                  315

<210> 348

<211> 317

<212> PRT

<213> Homo Sapiens

<400> 348

Met Asp Gln Tyr Asn His Ser Ser Leu Ala Glu Phe Val Phe Leu Gly  
 1                                  5                                  10                                  15

Phe Ala Ser Val Gly Tyr Val Arg Gly Trp Leu Phe Val Leu Leu Leu  
           20                                  25                                  30

Leu Ala Tyr Leu Phe Thr Ile Cys Gly Asn Met Leu Ile Phe Ser Val  
           35                                  40                                  45

Ile Arg Leu Asp Ala Ala Leu His Thr Pro Met Tyr His Phe Val Ser  
           50                                  55                                  60

Val Leu Ser Phe Leu Glu Leu Trp Tyr Thr Ala Thr Thr Ile Pro Lys  
           65                                  70                                  75                                  80

Met Leu Ser Asn Ile Leu Ser Glu Lys Lys Thr Ile Ser Phe Ala Gly  
                                   85                                  90                                  95

Cys Leu Leu Gln Thr Tyr Phe Phe His Ser Leu Gly Ala Ser Glu Cys  
           100                                  105                                  110

Tyr Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Leu Ala Ile Cys Arg  
           115                                  120                                  125

Pro Leu His Tyr Pro Ile Ile Met Thr Thr Thr Leu Cys Ala Lys Met  
           130                                  135                                  140

Ala Ala Ala Cys Trp Thr Cys Gly Phe Leu Cys Pro Ile Ser Glu Val  
           145                                  150                                  155                                  160

Ile Leu Ala Ser Gln Leu Pro Phe Cys Ala Tyr Asn Glu Ile Gln His

165 170 175

Ile Phe Cys Asp Phe Pro Pro Leu Leu Ser Leu Ala Cys Lys Asp Thr  
180 185 190

Ser Ala Asn Ile Leu Val Asp Phe Ala Ile Asn Ala Phe Ile Ile Leu  
195 200 205

Ile Thr Phe Phe Phe Ile Met Ile Ser Tyr Ala Arg Ile Ile Gly Ala  
210 215 220

Val Leu Lys Ile Lys Thr Ala Ser Gly Arg Lys Lys Ala Phe Ser Thr  
225 230 235 240

Cys Ala Ser His Leu Ala Val Val Leu Ile Phe Phe Gly Ser Ile Ile  
245 250 255

Phe Met Tyr Val Arg Leu Lys Lys Ser Tyr Ser Leu Thr Leu Asp Arg  
260 265 270

Thr Leu Ala Ile Val Tyr Ser Val Leu Thr Pro Met Val Asn Pro Ile  
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Glu Ile Ile Lys Ala Ile Lys Arg Thr  
290 295 300

Ile Phe Gln Lys Gly Asp Lys Ala Ser Leu Ala His Leu  
305 310 315

<210> 349  
<211> 960  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(957)  
<223>

<400> 349 48  
atg aca cag ttg acg gcc agt ggg aat cag aca atg gtg act gag ttc  
Met Thr Gln Leu Thr Ala Ser Gly Asn Gln Thr Met Val Thr Glu Phe  
1 5 10 15

ctc ttc tct atg ttc ccg cat gcg cac aga ggt ggc ctc tta ttc ttt 96  
Leu Phe Ser Met Phe Pro His Ala His Arg Gly Gly Leu Leu Phe Phe  
20 25 30

att ccc ttg ctt ctc atc tac gga ttt atc cta act gga aac cta ata 144  
Ile Pro Leu Leu Leu Ile Tyr Gly Phe Ile Leu Thr Gly Asn Leu Ile

35	40	45	
atg ttc att gtc atc cag gtg ggc atg gcc ctg cac acc cct ttg tat			192
Met Phe Ile Val Ile Gln Val Gly Met Ala Leu His Thr Pro Leu Tyr			
50	55	60	
ttc ttt atc agt gtc ctc tcc ttc ctg gag atc tgc tat acc aca acc			240
Phe Phe Ile Ser Val Leu Ser Phe Leu Glu Ile Cys Tyr Thr Thr Thr			
65	70	75	80
acc atc ccc aag atg ctg tcc tgc cta atc agt gag cag aag agc att			288
Thr Ile Pro Lys Met Leu Ser Cys Leu Ile Ser Glu Gln Lys Ser Ile			
85	90	95	
tcc gtg gct ggc tgc ctc ctg cag atg tac ttt ttc cac tca ctt ggt			336
Ser Val Ala Gly Cys Leu Leu Gln Met Tyr Phe Phe His Ser Leu Gly			
100	105	110	
atc aca gaa agc tgt gtc ctg aca gca atg gcc att gac agg tac ata			384
Ile Thr Glu Ser Cys Val Leu Thr Ala Met Ala Ile Asp Arg Tyr Ile			
115	120	125	
gct atc tgc aat cca ctc cgt tac cca acc atc atg att ccc aaa ctt			432
Ala Ile Cys Asn Pro Leu Arg Tyr Pro Thr Ile Met Ile Pro Lys Leu			
130	135	140	
tgt atc cag ctg aca gtt gga tcc tgc ttt tgt ggc ttc ctc ctt gtg			480
Cys Ile Gln Leu Thr Val Gly Ser Cys Phe Cys Gly Phe Leu Leu Val			
145	150	155	160
ctt cct gag att gca tgg att tcc acc ttg cct ttc tgt ggc tcc aac			528
Leu Pro Glu Ile Ala Trp Ile Ser Thr Leu Pro Phe Cys Gly Ser Asn			
165	170	175	
cag atc cac cag ata ttc tgt gat ttc aca cct gtg ctg agc ttg gcc			576
Gln Ile His Gln Ile Phe Cys Asp Phe Thr Pro Val Leu Ser Leu Ala			
180	185	190	
tgc aca gat aca ttc cta gtg gtc att gtg gat gcc atc cat gca gcg			624
Cys Thr Asp Thr Phe Leu Val Val Ile Val Asp Ala Ile His Ala Ala			
195	200	205	
gaa att gta gcc tcc ttc ctg gtc att gct cta tcc tac atc cgg att			672
Glu Ile Val Ala Ser Phe Leu Val Ile Ala Leu Ser Tyr Ile Arg Ile			
210	215	220	
att ata gtg att ctg gga atg cac tca gct gaa ggt cat cac aag gcc			720
Ile Ile Val Ile Leu Gly Met His Ser Ala Glu Gly His His Lys Ala			
225	230	235	240
ttt tcc acc tgt gct gct cac ctt gct gtg ttc ttg cta ttt ttt ggc			768
Phe Ser Thr Cys Ala Ala His Leu Ala Val Phe Leu Leu Phe Phe Gly			
245	250	255	
agt gtg gct gtc atg tat ttg aga ttc tca gcc acc tac tca gtg ttt			816
Ser Val Ala Val Met Tyr Leu Arg Phe Ser Ala Thr Tyr Ser Val Phe			
260	265	270	
tgg gac aca gca att gct gtc act ttt gtt atc ctt gct ccc ttt ttc			864
Trp Asp Thr Ala Ile Ala Val Thr Phe Val Ile Leu Ala Pro Phe Phe			
275	280	285	

aac ccc atc atc tat agc ctg aaa aac aag gac atg aaa gag gct att 912  
 Asn Pro Ile Ile Tyr Ser Leu Lys Asn Lys Asp Met Lys Glu Ala Ile  
 290 295 300

gga agg ctt ttc cac tat cag aag agg gct ggt tgg gct ggg aaa tag 960  
 Gly Arg Leu Phe His Tyr Gln Lys Arg Ala Gly Trp Ala Gly Lys  
 305 310 315

<210> 350  
 <211> 319  
 <212> PRT  
 <213> Homo Sapiens

<400> 350

Met Thr Gln Leu Thr Ala Ser Gly Asn Gln Thr Met Val Thr Glu Phe  
 1 5 10 15

Leu Phe Ser Met Phe Pro His Ala His Arg Gly Gly Leu Leu Phe Phe  
 20 25 30

Ile Pro Leu Leu Leu Ile Tyr Gly Phe Ile Leu Thr Gly Asn Leu Ile  
 35 40 45

Met Phe Ile Val Ile Gln Val Gly Met Ala Leu His Thr Pro Leu Tyr  
 50 55 60

Phe Phe Ile Ser Val Leu Ser Phe Leu Glu Ile Cys Tyr Thr Thr Thr  
 65 70 75 80

Thr Ile Pro Lys Met Leu Ser Cys Leu Ile Ser Glu Gln Lys Ser Ile  
 85 90 95

Ser Val Ala Gly Cys Leu Leu Gln Met Tyr Phe Phe His Ser Leu Gly  
 100 105 110

Ile Thr Glu Ser Cys Val Leu Thr Ala Met Ala Ile Asp Arg Tyr Ile  
 115 120 125

Ala Ile Cys Asn Pro Leu Arg Tyr Pro Thr Ile Met Ile Pro Lys Leu  
 130 135 140

Cys Ile Gln Leu Thr Val Gly Ser Cys Phe Cys Gly Phe Leu Leu Val  
 145 150 155 160

Leu Pro Glu Ile Ala Trp Ile Ser Thr Leu Pro Phe Cys Gly Ser Asn  
 165 170 175



Gln Ile His Gln Ile Phe Cys Asp Phe Thr Pro Val Leu Ser Leu Ala  
 180 185 190  
 Cys Thr Asp Thr Phe Leu Val Val Ile Val Asp Ala Ile His Ala Ala  
 195 200 205  
 Glu Ile Val Ala Ser Phe Leu Val Ile Ala Leu Ser Tyr Ile Arg Ile  
 210 215 220  
 Ile Ile Val Ile Leu Gly Met His Ser Ala Glu Gly His His Lys Ala  
 225 230 235 240  
 Phe Ser Thr Cys Ala Ala His Leu Ala Val Phe Leu Leu Phe Phe Gly  
 245 250 255  
 Ser Val Ala Val Met Tyr Leu Arg Phe Ser Ala Thr Tyr Ser Val Phe  
 260 265 270  
 Trp Asp Thr Ala Ile Ala Val Thr Phe Val Ile Leu Ala Pro Phe Phe  
 275 280 285  
 Asn Pro Ile Ile Tyr Ser Leu Lys Asn Lys Asp Met Lys Glu Ala Ile  
 290 295 300  
 Gly Arg Leu Phe His Tyr Gln Lys Arg Ala Gly Trp Ala Gly Lys  
 305 310 315

<210> 351  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (972)  
 <223>

<400> 351  
 atg aat gag aca aat cat tct cgg gtg aca gaa ttt gtg ttg ctg gga 48  
 Met Asn Glu Thr Asn His Ser Arg Val Thr Glu Phe Val Leu Leu Gly  
 1 5 10 15  
 ctg tct agt tca agg gag ctc caa cct ttc ttg ttt ctt aca ttt tca 96  
 Leu Ser Ser Ser Arg Glu Leu Gln Pro Phe Leu Phe Leu Thr Phe Ser  
 20 25 30  
 cta ctt tat cta gca att ctg ttg ggc aac ttt ctc atc atc ctc act 144  
 Leu Leu Tyr Leu Ala Ile Leu Leu Gly Asn Phe Leu Ile Ile Leu Thr  
 35 40 45  
 gtg acc tca gat tcc cgc ctt cac acc ccc atg tac ttt ctg ctt gca 192

Val Thr Ser Asp Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ala  
 50 55 60

aac ctg tca ttt ata gac gta tgt gtt gcc tct ttt gct acc cct aaa 240  
 Asn Leu Ser Phe Ile Asp Val Cys Val Ala Ser Phe Ala Thr Pro Lys  
 65 70 75 80

atg att gca gac ttt ctg gtt gag cgc aag act att tct ttt gat gcc 288  
 Met Ile Ala Asp Phe Leu Val Glu Arg Lys Thr Ile Ser Phe Asp Ala  
 85 90 95

tgc ctg gcc cag att ttc ttt gtt cat ctc ttc act ggc agt gaa atg 336  
 Cys Leu Ala Gln Ile Phe Phe Val His Leu Phe Thr Gly Ser Glu Met  
 100 105 110

gtg ctc cta gtt tcc atg gcc tat gac cgt tat gtt gct ata tgc aaa 384  
 Val Leu Leu Val Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Lys  
 115 120 125

cct ctc cac tac atg aca gtc atg agc cgt cgt gta tgt gtt gtg ctc 432  
 Pro Leu His Tyr Met Thr Val Met Ser Arg Arg Val Cys Val Val Leu  
 130 135 140

gtc ctc att tca tgg ttt gtg ggc ttc atc cat act acc agc cag ttg 480  
 Val Leu Ile Ser Trp Phe Val Gly Phe Ile His Thr Thr Ser Gln Leu  
 145 150 155 160

gca ttc act gtt aat ctg cca ttt tgt ggt cct aat aag gta gac agt 528  
 Ala Phe Thr Val Asn Leu Pro Phe Cys Gly Pro Asn Lys Val Asp Ser  
 165 170 175

ttt ttc tgt gac ctt cct cta gtg acc aag tta gcc tgc ata gac act 576  
 Phe Phe Cys Asp Leu Pro Leu Val Thr Lys Leu Ala Cys Ile Asp Thr  
 180 185 190

tat gtt gtc agc tta cta ata gtt gca gat agt ggc ttt ctt tct ctg 624  
 Tyr Val Val Ser Leu Leu Ile Val Ala Asp Ser Gly Phe Leu Ser Leu  
 195 200 205

agt tcc ttt ctc ctc ttg gtt gtc tcc tac act gta ata ctt gtt aca 672  
 Ser Ser Phe Leu Leu Leu Val Val Ser Tyr Thr Val Ile Leu Val Thr  
 210 215 220

gtt agg aat cgc tcc tct gca agc atg gcg aag gcc cgc tcc aca ttg 720  
 Val Arg Asn Arg Ser Ser Ala Ser Met Ala Lys Ala Arg Ser Thr Leu  
 225 230 235 240

act gct cac atc act gtg gtc act tta ttc ttt gga cca tgc att ttc 768  
 Thr Ala His Ile Thr Val Val Thr Leu Phe Phe Gly Pro Cys Ile Phe  
 245 250 255

atc tat gtg tgg ccc ttc agc agt tac tca gtt gac aaa gtc ctt gct 816  
 Ile Tyr Val Trp Pro Phe Ser Ser Tyr Ser Val Asp Lys Val Leu Ala  
 260 265 270

gta ttc tac acc atc ttc acg ctt att tta aac cct gta atc tac acg 864  
 Val Phe Tyr Thr Ile Phe Thr Leu Ile Leu Asn Pro Val Ile Tyr Thr  
 275 280 285

cta aga aac aaa gaa gtg aag gca gct atg tca aaa ctg aag agt cgg 912  
 Leu Arg Asn Lys Glu Val Lys Ala Ala Met Ser Lys Leu Lys Ser Arg

290 295 300

tat ctg aag cct agt cag gtt tct gta gtc ata aga aat gtt ctt ttc 960  
 Tyr Leu Lys Pro Ser Gln Val Ser Val Val Ile Arg Asn Val Leu Phe  
 305 310 315 320

cta gaa aca aag taa 975  
 Leu Glu Thr Lys

<210> 352  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 352

Met Asn Glu Thr Asn His Ser Arg Val Thr Glu Phe Val Leu Leu Gly  
 1 5 10 15

Leu Ser Ser Ser Arg Glu Leu Gln Pro Phe Leu Phe Leu Thr Phe Ser  
 20 25 30

Leu Leu Tyr Leu Ala Ile Leu Leu Gly Asn Phe Leu Ile Ile Leu Thr  
 35 40 45

Val Thr Ser Asp Ser Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ala  
 50 55 60

Asn Leu Ser Phe Ile Asp Val Cys Val Ala Ser Phe Ala Thr Pro Lys  
 65 70 75 80

Met Ile Ala Asp Phe Leu Val Glu Arg Lys Thr Ile Ser Phe Asp Ala  
 85 90 95

Cys Leu Ala Gln Ile Phe Phe Val His Leu Phe Thr Gly Ser Glu Met  
 100 105 110

Val Leu Leu Val Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Lys  
 115 120 125

Pro Leu His Tyr Met Thr Val Met Ser Arg Arg Val Cys Val Val Leu  
 130 135 140

Val Leu Ile Ser Trp Phe Val Gly Phe Ile His Thr Thr Ser Gln Leu  
 145 150 155 160

Ala Phe Thr Val Asn Leu Pro Phe Cys Gly Pro Asn Lys Val Asp Ser  
 165 170 175

Phe Phe Cys Asp Leu Pro Leu Val Thr Lys Leu Ala Cys Ile Asp Thr  
 180 185 190

Tyr Val Val Ser Leu Leu Ile Val Ala Asp Ser Gly Phe Leu Ser Leu  
 195 200 205

Ser Ser Phe Leu Leu Leu Val Val Ser Tyr Thr Val Ile Leu Val Thr  
 210 215 220

Val Arg Asn Arg Ser Ser Ala Ser Met Ala Lys Ala Arg Ser Thr Leu  
 225 230 235 240

Thr Ala His Ile Thr Val Val Thr Leu Phe Phe Gly Pro Cys Ile Phe  
 245 250 255

Ile Tyr Val Trp Pro Phe Ser Ser Tyr Ser Val Asp Lys Val Leu Ala  
 260 265 270

Val Phe Tyr Thr Ile Phe Thr Leu Ile Leu Asn Pro Val Ile Tyr Thr  
 275 280 285

Leu Arg Asn Lys Glu Val Lys Ala Ala Met Ser Lys Leu Lys Ser Arg  
 290 295 300

Tyr Leu Lys Pro Ser Gln Val Ser Val Val Ile Arg Asn Val Leu Phe  
 305 310 315 320

Leu Glu Thr Lys

<210> 353  
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 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1) .. (933)  
 <223>

<400> 353  
 atg gct cac aca aat gaa tcg atg gtg tct gag ttt gta ctt ttg gga  
 Met Ala His Thr Asn Glu Ser Met Val Ser Glu Phe Val Leu Leu Gly  
 1 5 10 15

48

ctc tct aat tcc tgg gga ctt caa ctt ttc ttt ttt gcc atc ttc tct  
 Leu Ser Asn Ser Trp Gly Leu Gln Leu Phe Phe Phe Ala Ile Phe Ser  
 20 25 30

96

ata gtc tat gtg aca tca gtg cta ggc aat gtc tta att att gtc att Ile Val Tyr Val Thr Ser Val Leu Gly Asn Val Leu Ile Ile Val Ile 35 40 45	144
att tct ttt gac tcc cat ttg aac tct cct atg tac ttc ttg ctc agt Ile Ser Phe Asp Ser His Leu Asn Ser Pro Met Tyr Phe Leu Leu Ser 50 55 60	192
aat ctt tct ttc att gat atc tgt cag tct aac ttt gcc acc ccc aag Asn Leu Ser Phe Ile Asp Ile Cys Gln Ser Asn Phe Ala Thr Pro Lys 65 70 75 80	240
atg ctt gta gac ttt ttt att gag cgc aag act atc tcc ttt gag ggt Met Leu Val Asp Phe Phe Ile Glu Arg Lys Thr Ile Ser Phe Glu Gly 85 90 95	288
tgc atg gcc cag ata ttc gtt ctt cac agt ttt gtt ggg agt gag atg Cys Met Ala Gln Ile Phe Val Leu His Ser Phe Val Gly Ser Glu Met 100 105 110	336
atg ttg ctt gta gct atg gca tat gac aga ttt ata gcc ata tgt aag Met Leu Leu Val Ala Met Ala Tyr Asp Arg Phe Ile Ala Ile Cys Lys 115 120 125	384
cct ctg cac tac agt aca att atg aac cgg agg ctc tgt gta att ttt Pro Leu His Tyr Ser Thr Ile Met Asn Arg Arg Leu Cys Val Ile Phe 130 135 140	432
gtg tct att tcc tgg gcg gtg ggc gtt ctt cat tct gtg agc cac ttg Val Ser Ile Ser Trp Ala Val Gly Val Leu His Ser Val Ser His Leu 145 150 155 160	480
gct ttt aca gtg gac ctg cca ttc tgt ggt ccc aat gag gtg gat agc Ala Phe Thr Val Asp Leu Pro Phe Cys Gly Pro Asn Glu Val Asp Ser 165 170 175	528
ttc ttt tgt gac ctt ccc ttg gtg ata gag ctg gct tgc atg gat aca Phe Phe Cys Asp Leu Pro Leu Val Ile Glu Leu Ala Cys Met Asp Thr 180 185 190	576
tat gaa atg gaa att atg acc cta acg aac agt ggc ctg ata tca ttg Tyr Glu Met Glu Ile Met Thr Leu Thr Asn Ser Gly Leu Ile Ser Leu 195 200 205	624
agc tgt ttc ctg gct tta att att tcc tac acc atc att ttg atc ggt Ser Cys Phe Leu Ala Leu Ile Ile Ser Tyr Thr Ile Ile Leu Ile Gly 210 215 220	672
gtc cga tgc agg tcc tcc agt ggg tca tct aag gct ctt tct aca tta Val Arg Cys Arg Ser Ser Ser Gly Ser Ser Lys Ala Leu Ser Thr Leu 225 230 235 240	720
act gcc cac atc aca gtg gtc att ctt ttc ttc ggg cct tgc att tat Thr Ala His Ile Thr Val Val Ile Leu Phe Phe Gly Pro Cys Ile Tyr 245 250 255	768
ttc tat ata tgg cct ttt agc aga ctt cct gtg gac aaa ttt ctt tct Phe Tyr Ile Trp Pro Phe Ser Arg Leu Pro Val Asp Lys Phe Leu Ser 260 265 270	816
gtg ttc tac act gtt tgt act ccc ttg ttg aac ccc atc atc tac tct	864

Val Phe Tyr Thr Val Cys Thr Pro Leu Leu Asn Pro Ile Ile Tyr Ser  
 275 280 285

ctg agg aat gaa gat gtt aaa gca gcc atg tgg aag ctg aga aac cgt 912  
 Leu Arg Asn Glu Asp Val Lys Ala Ala Met Trp Lys Leu Arg Asn Arg  
 290 295 300

cat gtg aac tcc tgg aaa aac tag 936  
 His Val Asn Ser Trp Lys Asn  
 305 310

<210> 354  
 <211> 311  
 <212> PRT  
 <213> Homo Sapiens

<400> 354

Met Ala His Thr Asn Glu Ser Met Val Ser Glu Phe Val Leu Leu Gly  
 1 5 10 15

Leu Ser Asn Ser Trp Gly Leu Gln Leu Phe Phe Phe Ala Ile Phe Ser  
 20 25 30

Ile Val Tyr Val Thr Ser Val Leu Gly Asn Val Leu Ile Ile Val Ile  
 35 40 45

Ile Ser Phe Asp Ser His Leu Asn Ser Pro Met Tyr Phe Leu Leu Ser  
 50 55 60

Asn Leu Ser Phe Ile Asp Ile Cys Gln Ser Asn Phe Ala Thr Pro Lys  
 65 70 75 80

Met Leu Val Asp Phe Phe Ile Glu Arg Lys Thr Ile Ser Phe Glu Gly  
 85 90 95

Cys Met Ala Gln Ile Phe Val Leu His Ser Phe Val Gly Ser Glu Met  
 100 105 110

Met Leu Leu Val Ala Met Ala Tyr Asp Arg Phe Ile Ala Ile Cys Lys  
 115 120 125

Pro Leu His Tyr Ser Thr Ile Met Asn Arg Arg Leu Cys Val Ile Phe  
 130 135 140

Val Ser Ile Ser Trp Ala Val Gly Val Leu His Ser Val Ser His Leu  
 145 150 155 160

Ala Phe Thr Val Asp Leu Pro Phe Cys Gly Pro Asn Glu Val Asp Ser  
 165 170 175

Phe Phe Cys Asp Leu Pro Leu Val Ile Glu Leu Ala Cys Met Asp Thr  
 180 185 190

Tyr Glu Met Glu Ile Met Thr Leu Thr Asn Ser Gly Leu Ile Ser Leu  
 195 200 205

Ser Cys Phe Leu Ala Leu Ile Ile Ser Tyr Thr Ile Ile Leu Ile Gly  
 210 215 220

Val Arg Cys Arg Ser Ser Ser Gly Ser Ser Lys Ala Leu Ser Thr Leu  
 225 230 235 240

Thr Ala His Ile Thr Val Val Ile Leu Phe Phe Gly Pro Cys Ile Tyr  
 245 250 255

Phe Tyr Ile Trp Pro Phe Ser Arg Leu Pro Val Asp Lys Phe Leu Ser  
 260 265 270

Val Phe Tyr Thr Val Cys Thr Pro Leu Leu Asn Pro Ile Ile Tyr Ser  
 275 280 285

Leu Arg Asn Glu Asp Val Lys Ala Ala Met Trp Lys Leu Arg Asn Arg  
 290 295 300

His Val Asn Ser Trp Lys Asn  
 305 310

<210> 355  
 <211> 933  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(930)  
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<400> 355  
 atg gac cca cag aac tat tcc ttg gtg tca gaa ttt gtg ttg cat gga 48  
 Met Asp Pro Gln Asn Tyr Ser Leu Val Ser Glu Phe Val Leu His Gly  
 1 5 10 15

ctc tgc act tca cga cat ctt caa aat ttt ttc ttt ata ttt ttc ttt 96  
 Leu Cys Thr Ser Arg His Leu Gln Asn Phe Phe Phe Ile Phe Phe Phe  
 20 25 30

ggg gtc tat gtg gcc att atg ctg ggt aac ctt ctc att ttg gtc act 144  
 Gly Val Tyr Val Ala Ile Met Leu Gly Asn Leu Leu Ile Leu Val Thr  
 35 40 45

gta att tct gat ccc tgc ctg cac tcc tcc cct atg tac ttc ctg ctg 192  
 Val Ile Ser Asp Pro Cys Leu His Ser Ser Pro Met Tyr Phe Leu Leu  
 50 55 60

ggg aac cta gct ttc ctg gac atg tgg ctg gcc tca ttt gcc act ccc 240  
 Gly Asn Leu Ala Phe Leu Asp Met Trp Leu Ala Ser Phe Ala Thr Pro  
 65 70 75 80

aag atg atc agg gat ttc ctt agt gat caa aaa ctc atc tcc ttt gga 288  
 Lys Met Ile Arg Asp Phe Leu Ser Asp Gln Lys Leu Ile Ser Phe Gly  
 85 90 95

gga tgt atg gct caa atc ttc ttc ttg cac ttt act ggt ggg gct gag 336  
 Gly Cys Met Ala Gln Ile Phe Phe Leu His Phe Thr Gly Gly Ala Glu  
 100 105 110

atg gtg ctc ctg gtt tcc atg gcc tat gac aga tat gtg gcc ata tgc 384  
 Met Val Leu Leu Val Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys  
 115 120 125

aaa ccc ttg cat tac atg act ttg atg agt tgg cag act tgc atc agg 432  
 Lys Pro Leu His Tyr Met Thr Leu Met Ser Trp Gln Thr Cys Ile Arg  
 130 135 140

ctg gtg ctg gct tca tgg gtc gtt gga ttt gtg cac tcc atc agt caa 480  
 Leu Val Leu Ala Ser Trp Val Val Gly Phe Val His Ser Ile Ser Gln  
 145 150 155 160

gtg gct ttc act gta aat ttg cct tac tgt ggc ccc aat gag gta gac 528  
 Val Ala Phe Thr Val Asn Leu Pro Tyr Cys Gly Pro Asn Glu Val Asp  
 165 170 175

agc ttc ttc tgt gac ctc cct ctg gtg atc aaa ctt gcc tgc atg gac 576  
 Ser Phe Phe Cys Asp Leu Pro Leu Val Ile Lys Leu Ala Cys Met Asp  
 180 185 190

acc tat gtc ttg ggt ata att atg atc tca gac agt ggg ttg ctt tcc 624  
 Thr Tyr Val Leu Gly Ile Ile Met Ile Ser Asp Ser Gly Leu Leu Ser  
 195 200 205

ttg agc tgt ttt ctg ctc ctc ctg atc tcc tac acc gtg atc ctc ctc 672  
 Leu Ser Cys Phe Leu Leu Leu Ile Ser Tyr Thr Val Ile Leu Leu  
 210 215 220

gct atc aga cag cgt gct gcc ggt agc aca tcc aaa gca ctc tcc act 720  
 Ala Ile Arg Gln Arg Ala Ala Gly Ser Thr Lys Ala Leu Ser Thr  
 225 230 235 240

tgc tct gca cat atc atg gta gtg acg ctg ttc ttt ggc cct tgc att 768  
 Cys Ser Ala His Ile Met Val Val Thr Leu Phe Phe Gly Pro Cys Ile  
 245 250 255

ttt gtt tat gtg cgg cct ttc agt agg ttc tct gtg gac aag ctg ctg 816  
 Phe Val Tyr Val Arg Pro Phe Ser Arg Phe Ser Val Asp Lys Leu Leu  
 260 265 270

tct gtg ttt tat acc att ttt act cca ctc ctg aac ccc att atc tac 864  
 Ser Val Phe Tyr Thr Ile Phe Thr Pro Leu Leu Asn Pro Ile Ile Tyr  
 275 280 285



aca ttg aga aat gag gag atg aaa gca gct atg aag aaa ctg caa aac 912  
 Thr Leu Arg Asn Glu Glu Met Lys Ala Ala Met Lys Lys Leu Gln Asn  
 290 295 300

cga cgg gtg act ttt caa tga 933  
 Arg Arg Val Thr Phe Gln  
 305 310

<210> 356  
 <211> 310  
 <212> PRT  
 <213> Homo Sapiens

<400> 356

Met Asp Pro Gln Asn Tyr Ser Leu Val Ser Glu Phe Val Leu His Gly  
 1 5 10 15

Leu Cys Thr Ser Arg His Leu Gln Asn Phe Phe Phe Ile Phe Phe Phe  
 20 25 30

Gly Val Tyr Val Ala Ile Met Leu Gly Asn Leu Leu Ile Leu Val Thr  
 35 40 45

Val Ile Ser Asp Pro Cys Leu His Ser Ser Pro Met Tyr Phe Leu Leu  
 50 55 60

Gly Asn Leu Ala Phe Leu Asp Met Trp Leu Ala Ser Phe Ala Thr Pro  
 65 70 75 80

Lys Met Ile Arg Asp Phe Leu Ser Asp Gln Lys Leu Ile Ser Phe Gly  
 85 90 95

Gly Cys Met Ala Gln Ile Phe Phe Leu His Phe Thr Gly Gly Ala Glu  
 100 105 110

Met Val Leu Leu Val Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys  
 115 120 125

Lys Pro Leu His Tyr Met Thr Leu Met Ser Trp Gln Thr Cys Ile Arg  
 130 135 140

Leu Val Leu Ala Ser Trp Val Val Gly Phe Val His Ser Ile Ser Gln  
 145 150 155 160

Val Ala Phe Thr Val Asn Leu Pro Tyr Cys Gly Pro Asn Glu Val Asp  
 165 170 175

Ser Phe Phe Cys Asp Leu Pro Leu Val Ile Lys Leu Ala Cys Met Asp

180 185 190

Thr Tyr Val Leu Gly Ile Ile Met Ile Ser Asp Ser Gly Leu Leu Ser  
195 200 205

Leu Ser Cys Phe Leu Leu Leu Leu Ile Ser Tyr Thr Val Ile Leu Leu  
210 215 220

Ala Ile Arg Gln Arg Ala Ala Gly Ser Thr Ser Lys Ala Leu Ser Thr  
225 230 235 240

Cys Ser Ala His Ile Met Val Val Thr Leu Phe Phe Gly Pro Cys Ile  
245 250 255

Phe Val Tyr Val Arg Pro Phe Ser Arg Phe Ser Val Asp Lys Leu Leu  
260 265 270

Ser Val Phe Tyr Thr Ile Phe Thr Pro Leu Leu Asn Pro Ile Ile Tyr  
275 280 285

Thr Leu Arg Asn Glu Glu Met Lys Ala Ala Met Lys Lys Leu Gln Asn  
290 295 300

Arg Arg Val Thr Phe Gln  
305 310

<210> 357  
<211> 939  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(936)  
<223>

<400> 357 48  
atg gat ctt aaa aat gga tct cta gtg acc gag ttt att tta cta gga  
Met Asp Leu Lys Asn Gly Ser Leu Val Thr Glu Phe Ile Leu Leu Gly  
1 5 10 15

ttt ttt gga cga tgg gaa ctt caa att ttc ttc ttt gtg aca ttt tcc 96  
Phe Phe Gly Arg Trp Glu Leu Gln Ile Phe Phe Phe Val Thr Phe Ser  
20 25 30

ctg atc tac ggt gct act gtg atg gga aac att ctc att atg gtc aca 144  
Leu Ile Tyr Gly Ala Thr Val Met Gly Asn Ile Leu Ile Met Val Thr  
35 40 45

gtg aca tgt agg tca acc ctt cat tct ccc ttg tac ttt ctc ctt gga 192  
Val Thr Cys Arg Ser Thr Leu His Ser Pro Leu Tyr Phe Leu Leu Gly

50	55	60	
aat ctc tct ttt ttg gac atg tgt ctc tcc act gcc aca aca ccc aag			240
Asn Leu Ser Phe Leu Asp Met Cys Leu Ser Thr Ala Thr Thr Pro Lys			
65	70	75	80
atg atc ata gat ttg ctc act gac cac aag acc atc tct gtg tgg ggc			288
Met Ile Ile Asp Leu Leu Thr Asp His Lys Thr Ile Ser Val Trp Gly			
	85	90	95
tgc gtg acc cag atg ttc ttc atg cac ttc ttt ggg ggt gct gag atg			336
Cys Val Thr Gln Met Phe Phe Met His Phe Phe Gly Gly Ala Glu Met			
	100	105	110
act ctt ctg ata atc atg gcc ttt gac agg tat gta gcc ata tgt aaa			384
Thr Leu Leu Ile Ile Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Lys			
	115	120	125
ccc ctg cac tat agg aca atc atg agc cac aag ctg cta aag ggg ttt			432
Pro Leu His Tyr Arg Thr Ile Met Ser His Lys Leu Leu Lys Gly Phe			
	130	135	140
gcg ata ctt tca tgg ata att ggt ttt tta cac tcc ata agc cag ata			480
Ala Ile Leu Ser Trp Ile Ile Gly Phe Leu His Ser Ile Ser Gln Ile			
	145	150	155
gtt tta aca atg aac ttg cct ttc tgt ggc cac aat gtc ata aac aac			528
Val Leu Thr Met Asn Leu Pro Phe Cys Gly His Asn Val Ile Asn Asn			
	165	170	175
ata ttt tgt gat ctt ccc ctt gtg atc aag ctt gct tgc att gaa aca			576
Ile Phe Cys Asp Leu Pro Leu Val Ile Lys Leu Ala Cys Ile Glu Thr			
	180	185	190
tac acc ctg gaa tta ttt gtc att gct gac agc ggg ctg ctc tct ttc			624
Tyr Thr Leu Glu Leu Phe Val Ile Ala Asp Ser Gly Leu Leu Ser Phe			
	195	200	205
acc tgt ttc atc ctc ttg ctt gtt tct tac att gtc atc ctg gtc agt			672
Thr Cys Phe Ile Leu Leu Leu Val Ser Tyr Ile Val Ile Leu Val Ser			
	210	215	220
gta cca aaa aaa tca tca cat ggg ctc tcc aag gcg ctg tcc aca ttg			720
Val Pro Lys Lys Ser Ser His Gly Leu Ser Lys Ala Leu Ser Thr Leu			
	225	230	235
tct gcc cac atc att gtg gtc act ctg ttc ttt gga cct tgt att ttt			768
Ser Ala His Ile Ile Val Val Thr Leu Phe Phe Gly Pro Cys Ile Phe			
	245	250	255
atc tat gtt tgg cca ttc agt agt ttg gca agc aat aaa act ctt gcc			816
Ile Tyr Val Trp Pro Phe Ser Ser Leu Ala Ser Asn Lys Thr Leu Ala			
	260	265	270
gta ttt tat aca gtt atc aca ccc tta ctg aat ccg agt att tat acc			864
Val Phe Tyr Thr Val Ile Thr Pro Leu Leu Asn Pro Ser Ile Tyr Thr			
	275	280	285
ctg aga aat aag aaa atg caa gag gcc ata aga aaa tta cgg ttc caa			912
Leu Arg Asn Lys Lys Met Gln Glu Ala Ile Arg Lys Leu Arg Phe Gln			
	290	295	300

tat gtt agt tct gca cag aat ttc tag  
 Tyr Val Ser Ser Ala Gln Asn Phe  
 305 310

<210> 358  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 358

Met Asp Leu Lys Asn Gly Ser Leu Val Thr Glu Phe Ile Leu Leu Gly  
 1 5 10 15

Phe Phe Gly Arg Trp Glu Leu Gln Ile Phe Phe Phe Val Thr Phe Ser  
 20 25 30

Leu Ile Tyr Gly Ala Thr Val Met Gly Asn Ile Leu Ile Met Val Thr  
 35 40 45

Val Thr Cys Arg Ser Thr Leu His Ser Pro Leu Tyr Phe Leu Leu Gly  
 50 55 60

Asn Leu Ser Phe Leu Asp Met Cys Leu Ser Thr Ala Thr Thr Pro Lys  
 65 70 75 80

Met Ile Ile Asp Leu Leu Thr Asp His Lys Thr Ile Ser Val Trp Gly  
 85 90 95

Cys Val Thr Gln Met Phe Phe Met His Phe Phe Gly Gly Ala Glu Met  
 100 105 110

Thr Leu Leu Ile Ile Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Lys  
 115 120 125

Pro Leu His Tyr Arg Thr Ile Met Ser His Lys Leu Leu Lys Gly Phe  
 130 135 140

Ala Ile Leu Ser Trp Ile Ile Gly Phe Leu His Ser Ile Ser Gln Ile  
 145 150 155 160

Val Leu Thr Met Asn Leu Pro Phe Cys Gly His Asn Val Ile Asn Asn  
 165 170 175

Ile Phe Cys Asp Leu Pro Leu Val Ile Lys Leu Ala Cys Ile Glu Thr  
 180 185 190

Tyr Thr Leu Glu Leu Phe Val Ile Ala Asp Ser Gly Leu Leu Ser Phe  
 195 200 205

Thr Cys Phe Ile Leu Leu Leu Val Ser Tyr Ile Val Ile Leu Val Ser  
 210 215 220

Val Pro Lys Lys Ser Ser His Gly Leu Ser Lys Ala Leu Ser Thr Leu  
 225 230 235 240

Ser Ala His Ile Ile Val Val Thr Leu Phe Phe Gly Pro Cys Ile Phe  
 245 250 255

Ile Tyr Val Trp Pro Phe Ser Ser Leu Ala Ser Asn Lys Thr Leu Ala  
 260 265 270

Val Phe Tyr Thr Val Ile Thr Pro Leu Leu Asn Pro Ser Ile Tyr Thr  
 275 280 285

Leu Arg Asn Lys Lys Met Gln Glu Ala Ile Arg Lys Leu Arg Phe Gln  
 290 295 300

Tyr Val Ser Ser Ala Gln Asn Phe  
 305 310

<210> 359  
 <211> 927  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(924)  
 <223>

<400> 359  
 atg gcc atg gac aat gtc aca gca gtg ttt cag ttt ctc ctt att ggc 48  
 Met Ala Met Asp Asn Val Thr Ala Val Phe Gln Phe Leu Leu Ile Gly  
 1 5 10 15  
 att tct aac tat cct caa tgg aga gac acg ttt ttc aca tta gtg ctg 96  
 Ile Ser Asn Tyr Pro Gln Trp Arg Asp Thr Phe Phe Thr Leu Val Leu  
 20 25 30  
 ata att tac ctc agc aca ttg ttg ggg aat gga ttt atg atc ttt ctt 144  
 Ile Ile Tyr Leu Ser Thr Leu Leu Gly Asn Gly Phe Met Ile Phe Leu  
 35 40 45  
 att cac ttt gac ccc aac ctc cac act cca atc tac ttc ttc ctt agt 192  
 Ile His Phe Asp Pro Asn Leu His Thr Pro Ile Tyr Phe Phe Leu Ser  
 50 55 60  
 aac ctg tct ttc tta gac ctt tgt tat gga aca gct tcc atg ccc cag 240

536

305

<210> 360  
 <211> 308  
 <212> PRT  
 <213> Homo Sapiens

&lt;400&gt; 360

Met Ala Met Asp Asn Val Thr Ala Val Phe Gln Phe Leu Leu Ile Gly  
 1 5 10 15

Ile Ser Asn Tyr Pro Gln Trp Arg Asp Thr Phe Phe Thr Leu Val Leu  
 20 25 30

Ile Ile Tyr Leu Ser Thr Leu Leu Gly Asn Gly Phe Met Ile Phe Leu  
 35 40 45

Ile His Phe Asp Pro Asn Leu His Thr Pro Ile Tyr Phe Phe Leu Ser  
 50 55 60

Asn Leu Ser Phe Leu Asp Leu Cys Tyr Gly Thr Ala Ser Met Pro Gln  
 65 70 75 80

Ala Leu Val His Cys Phe Ser Thr His Pro Tyr Leu Ser Tyr Pro Arg  
 85 90 95

Cys Leu Ala Gln Thr Ser Val Ser Leu Ala Leu Ala Thr Ala Glu Cys  
 100 105 110

Leu Leu Leu Ala Ala Met Ala Tyr Asp Arg Val Val Ala Ile Ser Asn  
 115 120 125

Pro Leu Arg Tyr Ser Val Val Met Asn Gly Pro Val Cys Val Cys Leu  
 130 135 140

Val Ala Thr Ser Trp Gly Thr Ser Leu Val Leu Thr Ala Met Leu Ile  
 145 150 155 160

Leu Ser Leu Arg Leu His Phe Cys Gly Ala Asn Val Ile Asn His Phe  
 165 170 175

Ala Cys Glu Ile Leu Ser Leu Ile Lys Leu Thr Cys Ser Asp Thr Ser  
 180 185 190

Leu Asn Glu Phe Met Ile Leu Ile Thr Ser Ile Phe Thr Leu Leu Leu  
 195 200 205

Pro Phe Gly Phe Val Leu Leu Ser Tyr Ile Arg Ile Ala Met Ala Ile  
 210 215 220

Ile Arg Ile Arg Ser Leu Gln Gly Arg Leu Lys Ala Phe Thr Thr Cys  
 225 230 235 240

Gly Ser His Leu Thr Val Val Thr Ile Phe Tyr Gly Ser Ala Ile Ser  
 245 250 255

Met Tyr Met Lys Thr Gln Ser Lys Ser Ser Pro Asp Gln Asp Lys Phe  
 260 265 270

Ile Ser Val Phe Tyr Gly Ala Leu Thr Pro Met Leu Asn Pro Leu Ile  
 275 280 285

Tyr Ser Leu Arg Lys Lys Asp Val Lys Arg Ala Ile Arg Lys Val Met  
 290 295 300

Leu Lys Arg Thr  
 305

<210> 361  
 <211> 900  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (897)  
 <223>

<400> 361	
atg gag cca agg aaa aat gtg act gac ttt gtc ctc ttg ggc ttc aca	48
Met Glu Pro Arg Lys Asn Val Thr Asp Phe Val Leu Leu Gly Phe Thr	
1 5 10 15	
cag aat cca aag gag cag aaa gta ctt ttt gtt atg ttc ttg ctc ttc	96
Gln Asn Pro Lys Glu Gln Lys Val Leu Phe Val Met Phe Leu Leu Phe	
20 25 30	
tac att ttg acc atg gtg ggc aac ctg ctc att gta gtg acc gta act	144
Tyr Ile Leu Thr Met Val Gly Asn Leu Leu Ile Val Val Thr Val Thr	
35 40 45	
gtc agt gag acc ctg ggc tca cca atg tcc ttc ttt ctt gct ggc tta	192
Val Ser Glu Thr Leu Gly Ser Pro Met Ser Phe Phe Leu Ala Gly Leu	
50 55 60	
aca ttt ata gat atc att tat tct tca tcc att tcc ccc aga ttg att	240
Thr Phe Ile Asp Ile Ile Tyr Ser Ser Ile Ser Pro Arg Leu Ile	
65 70 75 80	



tca gac ttg ttc ttt ggg aat aat tcc ata tcc ttc caa tct ttc atg	288
Ser Asp Leu Phe Phe Gly Asn Asn Ser Ile Ser Phe Gln Ser Phe Met	
85 90 95	
gcc cag ctc ttt atc gag cac ctt ttt ggt ggg tca gag gtc ttt ctc	336
Ala Gln Leu Phe Ile Glu His Leu Phe Gly Gly Ser Glu Val Phe Leu	
100 105 110	
ctg ttg gtg atg gcc tat gac cgc tat gtg gcc atc tgt aag ccc ttg	384
Leu Leu Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu	
115 120 125	
cat tat ttg gtt atc atg aga caa tgg gtg tgt gtt ttg ctg ctg gta	432
His Tyr Leu Val Ile Met Arg Gln Trp Val Cys Val Leu Leu Leu Val	
130 135 140	
gtg tcc tgg gtt gga gga ttt ctg caa tca gta ttt caa ctt agc att	480
Val Ser Trp Val Gly Gly Phe Leu Gln Ser Val Phe Gln Leu Ser Ile	
145 150 155 160	
att tat ggg ctc cca ttc tgt ggc ccc aat gtc att gat cat ttt ttc	528
Ile Tyr Gly Leu Pro Phe Cys Gly Pro Asn Val Ile Asp His Phe Phe	
165 170 175	
tgt gac atg tat ccc tta ttg aaa ctg gcc tgc act gac acc cat gtt	576
Cys Asp Met Tyr Pro Leu Leu Lys Leu Ala Cys Thr Asp Thr His Val	
180 185 190	
att ggc ctc tta gtg gtg gcc aat gga gga ctg tct tgc act att gcg	624
Ile Gly Leu Leu Val Val Ala Asn Gly Gly Leu Ser Cys Thr Ile Ala	
195 200 205	
ttt ctg ctc tta ctc atc tct tat ggt gtc atc ctg cac tct cta aag	672
Phe Leu Leu Leu Leu Ile Ser Tyr Gly Val Ile Leu His Ser Leu Lys	
210 215 220	
aaa ctt agt cag aaa ggg agg caa aaa gcc cac tca acc tgc agt tcc	720
Lys Leu Ser Gln Lys Gly Arg Gln Lys Ala His Ser Thr Cys Ser Ser	
225 230 235 240	
cac atc act gtg gtt gtc ttc ttc ttt gtt cct tgt att ttt atg tgt	768
His Ile Thr Val Val Val Phe Phe Phe Val Pro Cys Ile Phe Met Cys	
245 250 255	
gct aga cct gct agg acc ttc tcc att gac aaa tca gtg agt gtg ttt	816
Ala Arg Pro Ala Arg Thr Phe Ser Ile Asp Lys Ser Val Ser Val Phe	
260 265 270	
tat aca gtc ata acc cca atg ctg aac ccc tta atc tac act ctg aga	864
Tyr Thr Val Ile Thr Pro Met Leu Asn Pro Leu Ile Tyr Thr Leu Arg	
275 280 285	
aat tct gag atg aca agt gct atg aag aag ctt tag	900
Asn Ser Glu Met Thr Ser Ala Met Lys Lys Leu	
290 295	

<210> 362  
 <211> 299  
 <212> PRT  
 <213> Homo Sapiens

&lt;400&gt; 362

Met Glu Pro Arg Lys Asn Val Thr Asp Phe Val Leu Leu Gly Phe Thr  
 1 5 10 15

Gln Asn Pro Lys Glu Gln Lys Val Leu Phe Val Met Phe Leu Leu Phe  
 20 25 30

Tyr Ile Leu Thr Met Val Gly Asn Leu Leu Ile Val Val Thr Val Thr  
 35 40 45

Val Ser Glu Thr Leu Gly Ser Pro Met Ser Phe Phe Leu Ala Gly Leu  
 50 55 60

Thr Phe Ile Asp Ile Ile Tyr Ser Ser Ser Ile Ser Pro Arg Leu Ile  
 65 70 75 80

Ser Asp Leu Phe Phe Gly Asn Asn Ser Ile Ser Phe Gln Ser Phe Met  
 85 90 95

Ala Gln Leu Phe Ile Glu His Leu Phe Gly Gly Ser Glu Val Phe Leu  
 100 105 110

Leu Leu Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125

His Tyr Leu Val Ile Met Arg Gln Trp Val Cys Val Leu Leu Leu Val  
 130 135 140

Val Ser Trp Val Gly Gly Phe Leu Gln Ser Val Phe Gln Leu Ser Ile  
 145 150 155 160

Ile Tyr Gly Leu Pro Phe Cys Gly Pro Asn Val Ile Asp His Phe Phe  
 165 170 175

Cys Asp Met Tyr Pro Leu Leu Lys Leu Ala Cys Thr Asp Thr His Val  
 180 185 190

Ile Gly Leu Leu Val Val Ala Asn Gly Gly Leu Ser Cys Thr Ile Ala  
 195 200 205

Phe Leu Leu Leu Leu Ile Ser Tyr Gly Val Ile Leu His Ser Leu Lys  
 210 215 220

Lys Leu Ser Gln Lys Gly Arg Gln Lys Ala His Ser Thr Cys Ser Ser  
 225 230 235 240

His Ile Thr Val Val Val Phe Phe Phe Val Pro Cys Ile Phe Met Cys  
245 250 255

Ala Arg Pro Ala Arg Thr Phe Ser Ile Asp Lys Ser Val Ser Val Phe  
260 265 270

Tyr Thr Val Ile Thr Pro Met Leu Asn Pro Leu Ile Tyr Thr Leu Arg  
275 280 285

Asn Ser Glu Met Thr Ser Ala Met Lys Lys Leu  
290 295

<210> 363  
<211> 948  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(945)  
<223>

<400> 363  
atg aga cag aat aac aat att aca gaa ttt gtc ctc ctg ggc ttt tct 48  
Met Arg Gln Asn Asn Asn Ile Thr Glu Phe Val Leu Leu Gly Phe Ser  
1 5 10 15  
cag gat cct ggt gtg caa aaa gca tta ttt gtc atg ttt tta ctc aca 96  
Gln Asp Pro Gly Val Gln Lys Ala Leu Phe Val Met Phe Leu Leu Thr  
20 25 30  
tac ttg gtg aca gtg gtg ggg aac ctg ctc att gtg gtg gat att att 144  
Tyr Leu Val Thr Val Val Gly Asn Leu Leu Ile Val Val Asp Ile Ile  
35 40 45  
gcc agc cct tcc ttg ggt tcc cca atg tat ttc ttc ctt gcc tgc ctg 192  
Ala Ser Pro Ser Leu Gly Ser Pro Met Tyr Phe Phe Leu Ala Cys Leu  
50 55 60  
tca ttt ata gat gct gca tat tcc act acc att tct ccc aag tta att 240  
Ser Phe Ile Asp Ala Ala Tyr Ser Thr Thr Ile Ser Pro Lys Leu Ile  
65 70 75 80  
gta ggc tta ttc tgt gat aaa aag act att tcc ttc caa ggt tgc atg 288  
Val Gly Leu Phe Cys Asp Lys Lys Thr Ile Ser Phe Gln Gly Cys Met  
85 90 95  
ggc cag cta ttt ata gac cat ttc ttt ggt ggg gct gag gtc ttc ctt 336  
Gly Gln Leu Phe Ile Asp His Phe Phe Gly Gly Ala Glu Val Phe Leu  
100 105 110  
ctg gtg gtg atg gcc tgt gat cgc tat gtg gcc atc tgt aag cca ctg 384  
Leu Val Val Met Ala Cys Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
115 120 125

cac tat ttg acc atc atg aat cga cag gtt tgc ttc ctt ctg ttg gtg 432  
 His Tyr Leu Thr Ile Met Asn Arg Gln Val Cys Phe Leu Leu Leu Val  
 130 135 140

gtg gcc atg att gga ggt ttt gta cat tct gcg ttt caa att gtt gtg 480  
 Val Ala Met Ile Gly Gly Phe Val His Ser Ala Phe Gln Ile Val Val  
 145 150 155 160

tac agt ctc cct atc tgt ggt ccc aat gtc att gtt cat ttc agt tgt 528  
 Tyr Ser Leu Pro Ile Cys Gly Pro Asn Val Ile Val His Phe Ser Cys  
 165 170 175

gac atg cac cca tta ctg gaa ctg gca tgc act gac acc tac ttt ata 576  
 Asp Met His Pro Leu Leu Glu Leu Ala Cys Thr Asp Thr Tyr Phe Ile  
 180 185 190

ggc ctc act gtt gtt gtc aat agt gga gca atc tgt atg gtc att ttc 624  
 Gly Leu Thr Val Val Val Asn Ser Gly Ala Ile Cys Met Val Ile Phe  
 195 200 205

aac ctt ctg tta atc tcc tat gga gtc atc cta agc tcc ctt aaa act 672  
 Asn Leu Leu Leu Ile Ser Tyr Gly Val Ile Leu Ser Ser Leu Lys Thr  
 210 215 220

tac agt cag gaa aag agg ggt aaa gcc ttg tct acc tgc agc tcc ggc 720  
 Tyr Ser Gln Glu Lys Arg Gly Lys Ala Leu Ser Thr Cys Ser Ser Gly  
 225 230 235 240

agt acc gtt gtt gtc ctc ttt ttt gta ccc tgt att ttc ata tat gtt 768  
 Ser Thr Val Val Val Leu Phe Phe Val Pro Cys Ile Phe Ile Tyr Val  
 245 250 255

aga cct gtt tca aac ttt cct act gat aag ttc atg act gtg ttt tat 816  
 Arg Pro Val Ser Asn Phe Pro Thr Asp Lys Phe Met Thr Val Phe Tyr  
 260 265 270

acc att atc aca cac atg ctg agt cct tta ata tat acg ttg aga aat 864  
 Thr Ile Ile Thr His Met Leu Ser Pro Leu Ile Tyr Thr Leu Arg Asn  
 275 280 285

tca gag atg aga aat gct ata gaa aaa ctc ttg ggt aaa aag tta act 912  
 Ser Glu Met Arg Asn Ala Ile Glu Lys Leu Leu Gly Lys Lys Leu Thr  
 290 295 300

ata ttt att ata gga gga gtg tcc gtc ctc atg tag 948  
 Ile Phe Ile Ile Gly Gly Val Ser Val Leu Met  
 305 310 315

<210> 364  
 <211> 315  
 <212> PRT  
 <213> Homo Sapiens

<400> 364

Met Arg Gln Asn Asn Asn Ile Thr Glu Phe Val Leu Leu Gly Phe Ser  
 1 5 10 15

Gln Asp Pro Gly Val Gln Lys Ala Leu Phe Val Met Phe Leu Leu Thr  
 20 25 30  
 Tyr Leu Val Thr Val Val Gly Asn Leu Leu Ile Val Val Asp Ile Ile  
 35 40 45  
 Ala Ser Pro Ser Leu Gly Ser Pro Met Tyr Phe Phe Leu Ala Cys Leu  
 50 55 60  
 Ser Phe Ile Asp Ala Ala Tyr Ser Thr Thr Ile Ser Pro Lys Leu Ile  
 65 70 75 80  
 Val Gly Leu Phe Cys Asp Lys Lys Thr Ile Ser Phe Gln Gly Cys Met  
 85 90 95  
 Gly Gln Leu Phe Ile Asp His Phe Phe Gly Gly Ala Glu Val Phe Leu  
 100 105 110  
 Leu Val Val Met Ala Cys Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125  
 His Tyr Leu Thr Ile Met Asn Arg Gln Val Cys Phe Leu Leu Leu Val  
 130 135 140  
 Val Ala Met Ile Gly Gly Phe Val His Ser Ala Phe Gln Ile Val Val  
 145 150 155 160  
 Tyr Ser Leu Pro Ile Cys Gly Pro Asn Val Ile Val His Phe Ser Cys  
 165 170 175  
 Asp Met His Pro Leu Leu Glu Leu Ala Cys Thr Asp Thr Tyr Phe Ile  
 180 185 190  
 Gly Leu Thr Val Val Val Asn Ser Gly Ala Ile Cys Met Val Ile Phe  
 195 200 205  
 Asn Leu Leu Leu Ile Ser Tyr Gly Val Ile Leu Ser Ser Leu Lys Thr  
 210 215 220  
 Tyr Ser Gln Glu Lys Arg Gly Lys Ala Leu Ser Thr Cys Ser Ser Gly  
 225 230 235 240  
 Ser Thr Val Val Val Leu Phe Phe Val Pro Cys Ile Phe Ile Tyr Val  
 245 250 255  
 Arg Pro Val Ser Asn Phe Pro Thr Asp Lys Phe Met Thr Val Phe Tyr

260 265 270  
 Thr Ile Ile Thr His Met Leu Ser Pro Leu Ile Tyr Thr Leu Arg Asn  
 275 280 285  
 Ser Glu Met Arg Asn Ala Ile Glu Lys Leu Leu Gly Lys Lys Leu Thr  
 290 295 300  
 Ile Phe Ile Ile Gly Gly Val Ser Val Leu Met  
 305 310 315  
 <210> 365  
 <211> 1044  
 <212> DNA  
 <213> Homo Sapiens  
 <220>  
 <221> CDS  
 <222> (1)..(1041)  
 <223>  
 <400> 365  
 atg ggt aac tgg act gca gcg gtg act gag ttt gtt ctg ctg ggg ttt 48  
 Met Gly Asn Trp Thr Ala Ala Val Thr Glu Phe Val Leu Leu Gly Phe  
 1 5 10 15  
 tcc ctg agc agg gag gtg gag ctg ctg ctc ctg gtg ctc ctg ctg ccc 96  
 Ser Leu Ser Arg Glu Val Glu Leu Leu Leu Val Leu Leu Pro  
 20 25 30  
 acg ttc ctg ctg act ctt ctg ggg aac ctg ctc atc atc tcc act gtg 144  
 Thr Phe Leu Leu Thr Leu Leu Gly Asn Leu Leu Ile Ile Ser Thr Val  
 35 40 45  
 ctg tcc tgc tcc cgc ctc cac acc ccc atg tac ttc ttc ttg tgc aac 192  
 Leu Ser Cys Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Cys Asn  
 50 55 60  
 ctc tct atc ctg gac atc ctc ttc acc tca gtc atc tct cca aaa gtg 240  
 Leu Ser Ile Leu Asp Ile Leu Phe Thr Ser Val Ile Ser Pro Lys Val  
 65 70 75 80  
 ttg gcc aac tta gga tct agg gat aaa acc atc tcc ttt gcc gga tgt 288  
 Leu Ala Asn Leu Gly Ser Arg Asp Lys Thr Ile Ser Phe Ala Gly Cys  
 85 90 95  
 atc acc cag tgc tat ttc tac ttt ttc ttg ggc aca gtt gag ttc ctc 336  
 Ile Thr Gln Cys Tyr Phe Tyr Phe Phe Leu Gly Thr Val Glu Phe Leu  
 100 105 110  
 ctg ctg acg gtc atg tcc tat gac cgt tat gcc acc atc tgc tgc ccc 384  
 Leu Leu Thr Val Met Ser Tyr Asp Arg Tyr Ala Thr Ile Cys Cys Pro  
 115 120 125  
 ctg cgg tac acc acc atc atg aga cct tct gtc tgc att ggg acc gtt 432  
 Leu Arg Tyr Thr Thr Ile Met Arg Pro Ser Val Cys Ile Gly Thr Val

130	135	140	
gta ttc tct tgg gtg gga ggc ttc ctg tct gtg ctc ttt cca acc atc			480
Val Phe Ser Trp Val Gly Gly Phe Leu Ser Val Leu Phe Pro Thr Ile			
145	150	155	160
ctc atc tcc cag ctg ccc ttc tgt ggc tcc aat atc att aac cac ttc			528
Leu Ile Ser Gln Leu Pro Phe Cys Gly Ser Asn Ile Ile Asn His Phe			
	165	170	175
ttc tgt gac agt gga ccc ttg ctg gcc ctg gcc tgt gca gac acc act			576
Phe Cys Asp Ser Gly Pro Leu Leu Ala Leu Ala Cys Ala Asp Thr Thr			
	180	185	190
gcc atc gag ctg atg gat ttt atg ctt tct tcc atg gtc atc ctc tgc			624
Ala Ile Glu Leu Met Asp Phe Met Leu Ser Ser Met Val Ile Leu Cys			
	195	200	205
tgc ata gtc ctc gtg gcc tat tcc tat acg tac atc atc ttg acc ata			672
Cys Ile Val Leu Val Ala Tyr Ser Tyr Thr Tyr Ile Ile Leu Thr Ile			
	210	215	220
gtg cgc att cct tct gca agt gga agg aag aag gcc ttt aat acc tgt			720
Val Arg Ile Pro Ser Ala Ser Gly Arg Lys Lys Ala Phe Asn Thr Cys			
	225	230	235
gct tcc cac ctg acc ata gtc atc att cct agt ggc atc act gtg ttt			768
Ala Ser His Leu Thr Ile Val Ile Ile Pro Ser Gly Ile Thr Val Phe			
	245	250	255
atc tat gtg act ccc tcc cag aaa gaa tat ctg gag atc aac aag atc			816
Ile Tyr Val Thr Pro Ser Gln Lys Glu Tyr Leu Glu Ile Asn Lys Ile			
	260	265	270
cct ttg gtt ctg agc agt gtg gtg act cca ttc ctc aac ccc ttt ata			864
Pro Leu Val Leu Ser Ser Val Val Thr Pro Phe Leu Asn Pro Phe Ile			
	275	280	285
tat act ctg agg aat gac aca gtg cag gga gtc ctc agg gat gtg tgg			912
Tyr Thr Leu Arg Asn Asp Thr Val Gln Gly Val Leu Arg Asp Val Trp			
	290	295	300
gtc agg gtt cga gga gtt ttt gaa aag agg atg agg gca gtg ctg aga			960
Val Arg Val Arg Gly Val Phe Glu Lys Arg Met Arg Ala Val Leu Arg			
	305	310	315
agc aga tta tcc tcc aac aaa gac cac caa gga agg gct tgc tct tct			1008
Ser Arg Leu Ser Ser Asn Lys Asp His Gln Gly Arg Ala Cys Ser Ser			
	325	330	335
cca cca tgt gtc tat tct gta aag ctc cag tgt tag			1044
Pro Pro Cys Val Tyr Ser Val Lys Leu Gln Cys			
	340	345	

&lt;210&gt; 366

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 366

Met Gly Asn Trp Thr Ala Ala Val Thr Glu Phe Val Leu Leu Gly Phe  
 1 5 10 15  
 Ser Leu Ser Arg Glu Val Glu Leu Leu Leu Val Leu Leu Leu Pro  
 20 25 30  
 Thr Phe Leu Leu Thr Leu Leu Gly Asn Leu Leu Ile Ile Ser Thr Val  
 35 40 45  
 Leu Ser Cys Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Cys Asn  
 50 55 60  
 Leu Ser Ile Leu Asp Ile Leu Phe Thr Ser Val Ile Ser Pro Lys Val  
 65 70 75 80  
 Leu Ala Asn Leu Gly Ser Arg Asp Lys Thr Ile Ser Phe Ala Gly Cys  
 85 90 95  
 Ile Thr Gln Cys Tyr Phe Tyr Phe Phe Leu Gly Thr Val Glu Phe Leu  
 100 105 110  
 Leu Leu Thr Val Met Ser Tyr Asp Arg Tyr Ala Thr Ile Cys Cys Pro  
 115 120 125  
 Leu Arg Tyr Thr Thr Ile Met Arg Pro Ser Val Cys Ile Gly Thr Val  
 130 135 140  
 Val Phe Ser Trp Val Gly Gly Phe Leu Ser Val Leu Phe Pro Thr Ile  
 145 150 155 160  
 Leu Ile Ser Gln Leu Pro Phe Cys Gly Ser Asn Ile Ile Asn His Phe  
 165 170 175  
 Phe Cys Asp Ser Gly Pro Leu Leu Ala Leu Ala Cys Ala Asp Thr Thr  
 180 185 190  
 Ala Ile Glu Leu Met Asp Phe Met Leu Ser Ser Met Val Ile Leu Cys  
 195 200 205  
 Cys Ile Val Leu Val Ala Tyr Ser Tyr Thr Tyr Ile Ile Leu Thr Ile  
 210 215 220  
 Val Arg Ile Pro Ser Ala Ser Gly Arg Lys Lys Ala Phe Asn Thr Cys  
 225 230 235 240



Ala Ser His Leu Thr Ile Val Ile Ile Pro Ser Gly Ile Thr Val Phe  
245 250 255

Ile Tyr Val Thr Pro Ser Gln Lys Glu Tyr Leu Glu Ile Asn Lys Ile  
260 265 270

Pro Leu Val Leu Ser Ser Val Val Thr Pro Phe Leu Asn Pro Phe Ile  
275 280 285

Tyr Thr Leu Arg Asn Asp Thr Val Gln Gly Val Leu Arg Asp Val Trp  
290 295 300

Val Arg Val Arg Gly Val Phe Glu Lys Arg Met Arg Ala Val Leu Arg  
305 310 315 320

Ser Arg Leu Ser Ser Asn Lys Asp His Gln Gly Arg Ala Cys Ser Ser  
325 330 335

Pro Pro Cys Val Tyr Ser Val Lys Leu Gln Cys  
340 345

<210> 367  
<211> 942  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(939)  
<223>

<400> 367  
atg gct ggg gaa aac cat act aca ctg cct gaa ttc ctc ctt ctg gga 48  
Met Ala Gly Glu Asn His Thr Thr Leu Pro Glu Phe Leu Leu Leu Gly  
1 5 10 15  
ttc tct gac ctc aag gcc ctg cag ggc ccc ctg ttc tgg gtg gtg ctt 96  
Phe Ser Asp Leu Lys Ala Leu Gln Gly Pro Leu Phe Trp Val Val Leu  
20 25 30  
ctg gtc tac ctg gtc acc ttg ctg ggt aac tcc ctg atc atc ctc ctc 144  
Leu Val Tyr Leu Val Thr Leu Leu Gly Asn Ser Leu Ile Ile Leu Leu  
35 40 45  
aca cag gtc agc cct gcc ctg cac tcc ccc atg tac ttc ttc ctg cgc 192  
Thr Gln Val Ser Pro Ala Leu His Ser Pro Met Tyr Phe Phe Leu Arg  
50 55 60  
caa ctc tca gtg gtg gag ctc ttc tac acc act gac atc gtg ccc agg 240  
Gln Leu Ser Val Val Glu Leu Phe Tyr Thr Thr Asp Ile Val Pro Arg  
65 70 75 80  
acc ctg gcc aat ctg ggc tcc ccg cat ccc cag gcc atc tct ttc cag 288

Thr Leu Ala Asn Leu Gly Ser Pro His Pro Gln Ala Ile Ser Phe Gln  
85 90 95

ggc tgt gca gcc cag atg tac gtc ttc att gtc ctg ggc atc tcg gag 336  
Gly Cys Ala Ala Gln Met Tyr Val Phe Ile Val Leu Gly Ile Ser Glu  
100 105 110

tgc tgc ctg ctc acg gcc atg gcc tat gac cga tat gtt gcc atc tgc 384  
Cys Cys Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys  
115 120 125

cag ccc cta cgc tat tcc acc ctc ttg agc cca cgg gcc tgc ttg gcc 432  
Gln Pro Leu Arg Tyr Ser Thr Leu Leu Ser Pro Arg Ala Cys Leu Ala  
130 135 140

atg gtg ggg tcc tcc tgg ctc aca gcc atc atc acg gcc acc acc cat 480  
Met Val Gly Ser Ser Trp Leu Thr Gly Ile Ile Thr Ala Thr Thr His  
145 150 155 160

gcc tcc ctc atc ttc tct cta cct ttt cgc agc cac ccg atc atc ccg 528  
Ala Ser Leu Ile Phe Ser Leu Pro Phe Arg Ser His Pro Ile Ile Pro  
165 170 175

cac ttt ctc tgt gac atc ctg cca gta ctg agg ctg gca agt gct ggg 576  
His Phe Leu Cys Asp Ile Leu Pro Val Leu Arg Leu Ala Ser Ala Gly  
180 185 190

aag cac agg agc gag atc tcc gtg atg aca gcc acc ata gtc ttc att 624  
Lys His Arg Ser Glu Ile Ser Val Met Thr Ala Thr Ile Val Phe Ile  
195 200 205

atg atc ccc ttc tct ctg att gtc acc tct tac atc cgc atc ctg ggt 672  
Met Ile Pro Phe Ser Leu Ile Val Thr Ser Tyr Ile Arg Ile Leu Gly  
210 215 220

gcc atc cta gca atg gcc tcc acc cag agc cgc cgc aag gtc ttc tcc 720  
Ala Ile Leu Ala Met Ala Ser Thr Gln Ser Arg Arg Lys Val Phe Ser  
225 230 235 240

acc tgc tcc tcc cat ctg ctc gtg gtc tct ctc ttc ttt gga aca gcc 768  
Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Phe Gly Thr Ala  
245 250 255

agc atc acc tac atc cgg ccg cag gca gcc tcc tct gtt acc aca gac 816  
Ser Ile Thr Tyr Ile Arg Pro Gln Ala Gly Ser Ser Val Thr Thr Asp  
260 265 270

cgc gtc ctc agt ctc ttc tac aca gtc atc aca ccc atg ctc aac ccc 864  
Arg Val Leu Ser Leu Phe Tyr Thr Val Ile Thr Pro Met Leu Asn Pro  
275 280 285

atc atc tac acc ctt cgg aac aag gac gtg agg agg gcc ctg cga cac 912  
Ile Ile Tyr Thr Leu Arg Asn Lys Asp Val Arg Arg Ala Leu Arg His  
290 295 300

ttg gtg aag agg cag cgc ccc tca ccc tga 942  
Leu Val Lys Arg Gln Arg Pro Ser Pro  
305 310

&lt;210&gt; 368

<211> 313  
 <212> PRT  
 <213> Homo Sapiens

<400> 368

Met Ala Gly Glu Asn His Thr Thr Leu Pro Glu Phe Leu Leu Leu Gly  
 1 5 10 15

Phe Ser Asp Leu Lys Ala Leu Gln Gly Pro Leu Phe Trp Val Val Leu  
 20 25 30

Leu Val Tyr Leu Val Thr Leu Leu Gly Asn Ser Leu Ile Ile Leu Leu  
 35 40 45

Thr Gln Val Ser Pro Ala Leu His Ser Pro Met Tyr Phe Phe Leu Arg  
 50 55 60

Gln Leu Ser Val Val Glu Leu Phe Tyr Thr Thr Asp Ile Val Pro Arg  
 65 70 75 80

Thr Leu Ala Asn Leu Gly Ser Pro His Pro Gln Ala Ile Ser Phe Gln  
 85 90 95

Gly Cys Ala Ala Gln Met Tyr Val Phe Ile Val Leu Gly Ile Ser Glu  
 100 105 110

Cys Cys Leu Leu Thr Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys  
 115 120 125

Gln Pro Leu Arg Tyr Ser Thr Leu Leu Ser Pro Arg Ala Cys Leu Ala  
 130 135 140

Met Val Gly Ser Ser Trp Leu Thr Gly Ile Ile Thr Ala Thr Thr His  
 145 150 155 160

Ala Ser Leu Ile Phe Ser Leu Pro Phe Arg Ser His Pro Ile Ile Pro  
 165 170 175

His Phe Leu Cys Asp Ile Leu Pro Val Leu Arg Leu Ala Ser Ala Gly  
 180 185 190

Lys His Arg Ser Glu Ile Ser Val Met Thr Ala Thr Ile Val Phe Ile  
 195 200 205

Met Ile Pro Phe Ser Leu Ile Val Thr Ser Tyr Ile Arg Ile Leu Gly  
 210 215 220

Ala Ile Leu Ala Met Ala Ser Thr Gln Ser Arg Arg Lys Val Phe Ser  
 225 230 235 240

Thr Cys Ser Ser His Leu Leu Val Val Ser Leu Phe Phe Gly Thr Ala  
 245 250 255

Ser Ile Thr Tyr Ile Arg Pro Gln Ala Gly Ser Ser Val Thr Thr Asp  
 260 265 270

Arg Val Leu Ser Leu Phe Tyr Thr Val Ile Thr Pro Met Leu Asn Pro  
 275 280 285

Ile Ile Tyr Thr Leu Arg Asn Lys Asp Val Arg Arg Ala Leu Arg His  
 290 295 300

Leu Val Lys Arg Gln Arg Pro Ser Pro  
 305 310

<210> 369  
 <211> 1098  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(1095)  
 <223>

<220>  
 <221> misc\_feature  
 <222> (146)..(146)  
 <223> Any nucleotide

<400> 369  
 atg atg aca gtg att tta aaa act tta ttg gga cag ata cag ggc ctc 48  
 Met Met Thr Val Ile Leu Lys Thr Leu Leu Gly Gln Ile Gln Gly Leu  
 1 5 10 15  
 agt gga aac cca cac tct act acg tct aga atg tac ttt tta tgt ttc 96  
 Ser Gly Asn Pro His Ser Thr Thr Ser Arg Met Tyr Phe Leu Cys Phe  
 20 25 30  
 tgt act tct cta cta ggt ttt aag gta cac tgg gtc tcc aga ttg atc 144  
 Cys Thr Ser Leu Leu Gly Phe Lys Val His Trp Val Ser Arg Leu Ile  
 35 40 45  
 ang aaa ctt tac atg gca tct ccc aac aat gac tcc act gcc cca gtc 192  
 Xaa Lys Leu Tyr Met Ala Ser Pro Asn Asn Asp Ser Thr Ala Pro Val  
 50 55 60  
 tct gaa ttc ctc ctc atc tgc ttc ccc aac ttc cag agc tgg cag cac 240  
 Ser Glu Phe Leu Leu Ile Cys Phe Pro Asn Phe Gln Ser Trp Gln His

65	70	75	80	
tgg ttg tct ctg ccc ctc agc ctt ctc ttc ctc ctg gcc atg gga gct				288
Trp Leu Ser Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Met Gly Ala				
	85	90	95	
aac acc acc ctc ctg atc acc atc cag ctg gag gcc tct ctg cac cag				336
Asn Thr Thr Leu Leu Ile Thr Ile Gln Leu Glu Ala Ser Leu His Gln				
	100	105	110	
ccc ctg tac tac ctg ctc agc ctc ctc tcc ctg ctg gac atc gtg ctc				384
Pro Leu Tyr Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu				
	115	120	125	
tgc ctc acc gtc atc ccc aag gtc ctg gcc atc ttc tgg ttt gac ctc				432
Cys Leu Thr Val Ile Pro Lys Val Leu Ala Ile Phe Trp Phe Asp Leu				
	130	135	140	
agg tgc atc agc ttc cca gcc tgc ttc ctc cag atg ttc atc atg aac				480
Arg Ser Ile Ser Phe Pro Ala Cys Phe Leu Gln Met Phe Ile Met Asn				
	145	150	155	160
agt ttt ttg acc atg gag tcc tgc acg ttc atg gtc atg gcc tat gac				528
Ser Phe Leu Thr Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp				
	165	170	175	
cgt tat gtg gcc atc tgc cat cca ttg aga tac ccg tct atc atc act				576
Arg Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr				
	180	185	190	
gac cag ttt gtg gct agg gcc gtg gtc ttt gtt ata gcc cgg aat gcc				624
Asp Gln Phe Val Ala Arg Ala Val Val Phe Val Ile Ala Arg Asn Ala				
	195	200	205	
ttt gtt tct ctt cct gtt ccc atg ctt tct gcc agg ctc aga tac tgt				672
Phe Val Ser Leu Pro Val Pro Met Leu Ser Ala Arg Leu Arg Tyr Cys				
	210	215	220	
gca gga aac ata atc aag aac tgc atc tgc agt aac ctg tct gtg tcc				720
Ala Gly Asn Ile Ile Lys Asn Cys Ile Cys Ser Asn Leu Ser Val Ser				
	225	230	235	240
aaa ctc tct tgt gat gac atc act ttc aat cag ctc tac cag ttt gtg				768
Lys Leu Ser Cys Asp Asp Ile Thr Phe Asn Gln Leu Tyr Gln Phe Val				
	245	250	255	
gca ggc tgg act ctg ttg ggc tct gat ctt atc ctt att gtt atc tcc				816
Ala Gly Trp Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Val Ile Ser				
	260	265	270	
tat tct ttt ata ttg aaa gtt gtg ctt agg atc aag gcc gag ggt gct				864
Tyr Ser Phe Ile Leu Lys Val Val Leu Arg Ile Lys Ala Glu Gly Ala				
	275	280	285	
gtg gcc aag gcc ttg agc acg tgt ggt tcc cac ttc atc ctc atc ctc				912
Val Ala Lys Ala Leu Ser Thr Cys Gly Ser His Phe Ile Leu Ile Leu				
	290	295	300	
ttc ttc agc aca gtc ctg ctg gtt ctg gtc atc act aac ctg gcc agg				960
Phe Phe Ser Thr Val Leu Leu Val Leu Val Ile Thr Asn Leu Ala Arg				
	305	310	315	320

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aag aga att cct cca gat gtc ccc atc ctg ctc aac atc ctg cac cac 1008  
 Lys Arg Ile Pro Pro Asp Val Pro Ile Leu Leu Asn Ile Leu His His  
 325 330 335

ctc att ccc cca gct ctg aac ccc att gtt tat ggt gtg aga acc aag 1056  
 Leu Ile Pro Pro Ala Leu Asn Pro Ile Val Tyr Gly Val Arg Thr Lys  
 340 345 350

gag atc aag cag gga atc caa aac ctg ctg aag agg ttg taa 1098  
 Glu Ile Lys Gln Gly Ile Gln Asn Leu Leu Lys Arg Leu  
 355 360 365

&lt;210&gt; 370

&lt;211&gt; 365

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (49)..(49)

&lt;223&gt; The 'Xaa' at location 49 stands for Lys, Arg, Thr, or Met.

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (146)..(146)

&lt;223&gt; Any nucleotide

&lt;400&gt; 370

Met Met Thr Val Ile Leu Lys Thr Leu Leu Gly Gln Ile Gln Gly Leu  
 1 5 10 15

Ser Gly Asn Pro His Ser Thr Thr Ser Arg Met Tyr Phe Leu Cys Phe  
 20 25 30

Cys Thr Ser Leu Leu Gly Phe Lys Val His Trp Val Ser Arg Leu Ile  
 35 40 45

Xaa Lys Leu Tyr Met Ala Ser Pro Asn Asn Asp Ser Thr Ala Pro Val  
 50 55 60

Ser Glu Phe Leu Leu Ile Cys Phe Pro Asn Phe Gln Ser Trp Gln His  
 65 70 75 80

Trp Leu Ser Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Met Gly Ala  
 85 90 95

Asn Thr Thr Leu Leu Ile Thr Ile Gln Leu Glu Ala Ser Leu His Gln  
 100 105 110

Pro Leu Tyr Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu  
 115 120 125

Cys Leu Thr Val Ile Pro Lys Val Leu Ala Ile Phe Trp Phe Asp Leu  
130 135 140

Arg Ser Ile Ser Phe Pro Ala Cys Phe Leu Gln Met Phe Ile Met Asn  
145 150 155 160

Ser Phe Leu Thr Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp  
165 170 175

Arg Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr  
180 185 190

Asp Gln Phe Val Ala Arg Ala Val Val Phe Val Ile Ala Arg Asn Ala  
195 200 205

Phe Val Ser Leu Pro Val Pro Met Leu Ser Ala Arg Leu Arg Tyr Cys  
210 215 220

Ala Gly Asn Ile Ile Lys Asn Cys Ile Cys Ser Asn Leu Ser Val Ser  
225 230 235 240

Lys Leu Ser Cys Asp Asp Ile Thr Phe Asn Gln Leu Tyr Gln Phe Val  
245 250 255

Ala Gly Trp Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Val Ile Ser  
260 265 270

Tyr Ser Phe Ile Leu Lys Val Val Leu Arg Ile Lys Ala Glu Gly Ala  
275 280 285

Val Ala Lys Ala Leu Ser Thr Cys Gly Ser His Phe Ile Leu Ile Leu  
290 295 300

Phe Phe Ser Thr Val Leu Leu Val Leu Val Ile Thr Asn Leu Ala Arg  
305 310 315 320

Lys Arg Ile Pro Pro Asp Val Pro Ile Leu Leu Asn Ile Leu His His  
325 330 335

Leu Ile Pro Pro Ala Leu Asn Pro Ile Val Tyr Gly Val Arg Thr Lys  
340 345 350

Glu Ile Lys Gln Gly Ile Gln Asn Leu Leu Lys Arg Leu  
355 360 365

WO 02/24726

<210> 371  
 <211> 957  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(954)  
 <223>

<400> 371  
 atg att cag cct atg gcg tca ccc agc aac agc tcc act gtc cca gtc 48  
 Met Ile Gln Pro Met Ala Ser Pro Ser Asn Ser Ser Thr Val Pro Val  
 1 5 10 15  
 tct gaa ttc ctc ctc acc tgc ttc ccc aac ttc cag agt tgg cag cac 96  
 Ser Glu Phe Leu Leu Thr Cys Phe Pro Asn Phe Gln Ser Trp Gln His  
 20 25 30  
 tgg ctc tcc ctg ccc ctc agc ctt ctc ttc ctc ctg gcc atg gga gct 144  
 Trp Leu Ser Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Met Gly Ala  
 35 40 45  
 aac acc acc ctc ctg atc acc atc cag ctg gag gcc tct ctg cac cag 192  
 Asn Thr Thr Leu Leu Ile Thr Ile Gln Leu Glu Ala Ser Leu His Gln  
 50 55 60  
 ccc ctg tac tac ctg ctc agc ctc ctc tcc ctg ctg gac atc gtg ctc 240  
 Pro Leu Tyr Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu  
 65 70 75 80  
 tgc ctc acc gtc atc ccc aag gtc ctg gcc atc ttc tgg tat gat ctt 288  
 Cys Leu Thr Val Ile Pro Lys Val Leu Ala Ile Phe Trp Tyr Asp Leu  
 85 90 95  
 agg tgc atc agc ttc cct gcc tgc ttc ctc cag atg ttc atc atg aac 336  
 Arg Ser Ile Ser Phe Pro Ala Cys Phe Leu Gln Met Phe Ile Met Asn  
 100 105 110  
 agt ttc ctc ccc atg gag tcc tgc acg ttt atg gtc atg gcc tat gac 384  
 Ser Phe Leu Pro Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp  
 115 120 125  
 cgt tat gtg gcc atc tgc cac cca ctg cgg tac cca tcc atc atc act 432  
 Arg Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr  
 130 135 140  
 aat caa ttt gtg gcc aaa gct agt gtc ttc att gtg gtg cgg aat gcg 480  
 Asn Gln Phe Val Ala Lys Ala Ser Val Phe Ile Val Val Arg Asn Ala  
 145 150 155 160  
 ctt ctt act gca ccc att cct atc ctc act tcc ctg ctc cat tac tgt 528  
 Leu Leu Thr Ala Pro Ile Pro Ile Leu Thr Ser Leu Leu His Tyr Cys  
 165 170 175  
 ggg gaa aat gtc att gag aac tgc atc tgt gcc aac ttg tct gtg tcc 576  
 Gly Glu Asn Val Ile Glu Asn Cys Ile Cys Ala Asn Leu Ser Val Ser  
 180 185 190



agg ctc tcc tgt gat aat ttc acc ctt aac aga atc tac caa ttt gtg 624  
 Arg Leu Ser Cys Asp Asn Phe Thr Leu Asn Arg Ile Tyr Gln Phe Val  
 195 200 205

gct ggt tgg acc ttg ctg ggc tca gat tta ttc ctc atc ttc ctc tct 672  
 Ala Gly Trp Thr Leu Leu Gly Ser Asp Leu Phe Leu Ile Phe Leu Ser  
 210 215 220

tac acc ttc att cta aga gct gtg ctt aga ttc aaa gca gag ggg gcg 720  
 Tyr Thr Phe Ile Leu Arg Ala Val Leu Arg Phe Lys Ala Glu Gly Ala  
 225 230 235 240

gca gtg aag gcc ctg agc aca tgt ggc tcc cac ttc atc ctc att ctt 768  
 Ala Val Lys Ala Leu Ser Thr Cys Gly Ser His Phe Ile Leu Ile Leu  
 245 250 255

ttc ttc agc acc ata ctg ctg gtt gtg gtg ttg aca aac gtg gcc aga 816  
 Phe Phe Ser Thr Ile Leu Leu Val Val Val Leu Thr Asn Val Ala Arg  
 260 265 270

aag aag gtc ccc atg gac atc ctg atc ctg ctg aac gtc ctt cat cac 864  
 Lys Lys Val Pro Met Asp Ile Leu Ile Leu Leu Asn Val Leu His His  
 275 280 285

ctt att cct cct gcg ttg aac cct att gtg tat ggg gtt cgg acc aaa 912  
 Leu Ile Pro Pro Ala Leu Asn Pro Ile Val Tyr Gly Val Arg Thr Lys  
 290 295 300

gag ata aaa cag gga att cag aag tta ctg cag aga ggg agg tga 957  
 Glu Ile Lys Gln Gly Ile Gln Lys Leu Leu Gln Arg Gly Arg  
 305 310 315

&lt;210&gt; 372

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 372

Met Ile Gln Pro Met Ala Ser Pro Ser Asn Ser Ser Thr Val Pro Val  
 1 5 10 15

Ser Glu Phe Leu Leu Thr Cys Phe Pro Asn Phe Gln Ser Trp Gln His  
 20 25 30

Trp Leu Ser Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Met Gly Ala  
 35 40 45

Asn Thr Thr Leu Leu Ile Thr Ile Gln Leu Glu Ala Ser Leu His Gln  
 50 55 60

Pro Leu Tyr Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu  
 65 70 75 80

Cys Leu Thr Val Ile Pro Lys Val Leu Ala Ile Phe Trp Tyr Asp Leu

556

<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (987)  
 <223>

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<400> 373
atg act ttg gtt tct ttt ttc tct ttc ctc tcc aag cca ttg ata atg      48
Met Thr Leu Val Ser Phe Phe Ser Phe Leu Ser Lys Pro Leu Ile Met
1          5          10          15

ctc ctt agc aat tca agc tgg agg cta tcc cag cct tct ttt ctc ctg      96
Leu Leu Ser Asn Ser Ser Trp Arg Leu Ser Gln Pro Ser Phe Leu Leu
          20          25          30

gta ggg att cca ggt tta gag gaa agc cag cac tgg att gca ctg ccc      144
Val Gly Ile Pro Gly Leu Glu Glu Ser Gln His Trp Ile Ala Leu Pro
          35          40          45

ctg ggc atc ctt tac ctc ctt gct tta gtg ggc aat gtt acc att ctc      192
Leu Gly Ile Leu Tyr Leu Leu Ala Leu Val Gly Asn Val Thr Ile Leu
          50          55          60

ttc atc atc tgg atg gac cca tcc ttg cac caa tct atg tac ctc ttc      240
Phe Ile Ile Trp Met Asp Pro Ser Leu His Gln Ser Met Tyr Leu Phe
          65          70          75          80

ctg tcc atg cta gct gcc atc gac ctg gtt ctg gcc tcc tcc act gca      288
Leu Ser Met Leu Ala Ala Ile Asp Leu Val Leu Ala Ser Ser Thr Ala
          85          90          95

ccc aaa gcc ctt gca gtg ctc ctg gtt cat gcc cac gag att ggg tac      336
Pro Lys Ala Leu Ala Val Leu Leu Val His Ala His Glu Ile Gly Tyr
          100          105          110

atc gtc tgc ctg atc cag atg ttc ttc atc cat gca ttc tcc tcc atg      384
Ile Val Cys Leu Ile Gln Met Phe Phe Ile His Ala Phe Ser Ser Met
          115          120          125

gag tca ggg gta ctt gtg gcc atg gct ctg gat cgc tat gta gcc att      432
Glu Ser Gly Val Leu Val Ala Met Ala Leu Asp Arg Tyr Val Ala Ile
          130          135          140

tgt cac ccc ttg cac cat tcc aca atc ctg cat cca ggg gtc ata ggg      480
Cys His Pro Leu His His Ser Thr Ile Leu His Pro Gly Val Ile Gly
          145          150          155          160

cgc atc gga atg gtg gtg ctg gtg agg gga tta cta ctc ctt atc ccc      528
Arg Ile Gly Met Val Val Leu Val Arg Gly Leu Leu Leu Leu Ile Pro
          165          170          175

ttc ccc att ttg ttg gga aca ctt atc ttc tgc caa gcc acc atc ata      576
Phe Pro Ile Leu Leu Gly Thr Leu Ile Phe Cys Gln Ala Thr Ile Ile
          180          185          190

ggc cat gcc tat tgt gaa cat atg gct gtt gtg aaa ctt gcc tgc tca      624
Gly His Ala Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Ser
          195          200          205

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gaa acc aca gtc aat cga gct tat ggg ctg act atg gcc ttg ctt gtg 672  
 Glu Thr Thr Val Asn Arg Ala Tyr Gly Leu Thr Met Ala Leu Leu Val  
 210 215 220  
 att ggg ctg gat gtt ctg gcc att ggt gtt tcc tat gcc cac atc ctc 720  
 Ile Gly Leu Asp Val Leu Ala Ile Gly Val Ser Tyr Ala His Ile Leu  
 225 230 235 240  
 cag gca gtg ctg aag gta cca ggg agt gag gcc cga ctt aag gcg ttt 768  
 Gln Ala Val Leu Lys Val Pro Gly Ser Glu Ala Arg Leu Lys Ala Phe  
 245 250 255  
 agc aca tgt ggc tct cat att tgt gtc atc ctg gtc ttc tat gtc cct 816  
 Ser Thr Cys Gly Ser His Ile Cys Val Ile Leu Val Phe Tyr Val Pro  
 260 265 270  
 gga att ttc tcc ttc ctc act cac cgc ttt ggt cat cat gta ccc cat 864  
 Gly Ile Phe Ser Phe Leu Thr His Arg Phe Gly His His Val Pro His  
 275 280 285  
 cat gtc cat gtt ctt ctg gcc aca cgg tat ctc ctc atg cca cct gcg 912  
 His Val His Val Leu Leu Ala Thr Arg Tyr Leu Leu Met Pro Pro Ala  
 290 295 300  
 ctc aat cct ctt gtc tat gga gtg aag act cag cag atc cgc cag cga 960  
 Leu Asn Pro Leu Val Tyr Gly Val Lys Thr Gln Gln Ile Arg Gln Arg  
 305 310 315 320  
 gtg ctc aga gtg ttt aca caa aag gat tga 990  
 Val Leu Arg Val Phe Thr Gln Lys Asp  
 325

<210> 374  
 <211> 329  
 <212> PRT  
 <213> Homo Sapiens

<400> 374

Met Thr Leu Val Ser Phe Phe Ser Phe Leu Ser Lys Pro Leu Ile Met  
 1 5 10 15

Leu Leu Ser Asn Ser Ser Trp Arg Leu Ser Gln Pro Ser Phe Leu Leu  
 20 25 30

Val Gly Ile Pro Gly Leu Glu Glu Ser Gln His Trp Ile Ala Leu Pro  
 35 40 45

Leu Gly Ile Leu Tyr Leu Leu Ala Leu Val Gly Asn Val Thr Ile Leu  
 50 55 60

Phe Ile Ile Trp Met Asp Pro Ser Leu His Gln Ser Met Tyr Leu Phe  
 65 70 75 80

Leu Ser Met Leu Ala Ala Ile Asp Leu Val Leu Ala Ser Ser Thr Ala  
                     85                    90                    95

Pro Lys Ala Leu Ala Val Leu Leu Val His Ala His Glu Ile Gly Tyr  
                     100                    105                    110

Ile Val Cys Leu Ile Gln Met Phe Phe Ile His Ala Phe Ser Ser Met  
                     115                    120                    125

Glu Ser Gly Val Leu Val Ala Met Ala Leu Asp Arg Tyr Val Ala Ile  
                     130                    135                    140

Cys His Pro Leu His His Ser Thr Ile Leu His Pro Gly Val Ile Gly  
                     145                    150                    155                    160

Arg Ile Gly Met Val Val Leu Val Arg Gly Leu Leu Leu Leu Ile Pro  
                     165                    170                    175

Phe Pro Ile Leu Leu Gly Thr Leu Ile Phe Cys Gln Ala Thr Ile Ile  
                     180                    185                    190

Gly His Ala Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Ser  
                     195                    200                    205

Glu Thr Thr Val Asn Arg Ala Tyr Gly Leu Thr Met Ala Leu Leu Val  
                     210                    215                    220

Ile Gly Leu Asp Val Leu Ala Ile Gly Val Ser Tyr Ala His Ile Leu  
                     225                    230                    235                    240

Gln Ala Val Leu Lys Val Pro Gly Ser Glu Ala Arg Leu Lys Ala Phe  
                     245                    250                    255

Ser Thr Cys Gly Ser His Ile Cys Val Ile Leu Val Phe Tyr Val Pro  
                     260                    265                    270

Gly Ile Phe Ser Phe Leu Thr His Arg Phe Gly His His Val Pro His  
                     275                    280                    285

His Val His Val Leu Leu Ala Thr Arg Tyr Leu Leu Met Pro Pro Ala  
                     290                    295                    300

Leu Asn Pro Leu Val Tyr Gly Val Lys Thr Gln Gln Ile Arg Gln Arg  
                     305                    310                    315                    320

Val Leu Arg Val Phe Thr Gln Lys Asp

325

<210> 375  
 <211> 960  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (957)  
 <223>

<400> 375  
 atg aat ttg gat tct ttt ttc tct ttc ctc ctc aag tca ttg ata atg 48  
 Met Asn Leu Asp Ser Phe Phe Ser Phe Leu Leu Lys Ser Leu Ile Met  
 1 5 10 15  
 gca ctt agc aat tcc agc tgg agg cta ccc cag cct tct ttt ttc ctg 96  
 Ala Leu Ser Asn Ser Ser Trp Arg Leu Pro Gln Pro Ser Phe Phe Leu  
 20 25 30  
 gta gga att ccg ggt tta gag gaa agc cag cac tgg atc gca ctg ccc 144  
 Val Gly Ile Pro Gly Leu Glu Glu Ser Gln His Trp Ile Ala Leu Pro  
 35 40 45  
 ctg ggc atc ctt tac ctc ctt gct cta gtg ggc aat gtt acc att ctc 192  
 Leu Gly Ile Leu Tyr Leu Leu Ala Leu Val Gly Asn Val Thr Ile Leu  
 50 55 60  
 ttc atc atc tgg atg gac cca tcc ttg cac caa tct atg tac ctc ttc 240  
 Phe Ile Ile Trp Met Asp Pro Ser Leu His Gln Ser Met Tyr Leu Phe  
 65 70 75 80  
 ctg tcc atg cta gct gcc atc gac ctg gtt gtg gcc tcc tcc act gca 288  
 Leu Ser Met Leu Ala Ala Ile Asp Leu Val Val Ala Ser Ser Thr Ala  
 85 90 95  
 ccc aaa gcc ctt gca gtg ctc ctg gtt cgt gcc caa gag att ggt tac 336  
 Pro Lys Ala Leu Ala Val Leu Leu Val Arg Ala Gln Glu Ile Gly Tyr  
 100 105 110  
 act gtc tgc ctg atc cag atg ttc ttc acc cat gca ttc tcc tcc atg 384  
 Thr Val Cys Leu Ile Gln Met Phe Phe Thr His Ala Phe Ser Ser Met  
 115 120 125  
 gag tca ggg gta ctt gtg gcc atg gct ctg gat cgc tat gta gcc att 432  
 Glu Ser Gly Val Leu Val Ala Met Ala Leu Asp Arg Tyr Val Ala Ile  
 130 135 140  
 tgt cac ccc ttg cac cat tcc aca atc ctg cat cca ggg gtc ata ggg 480  
 Cys His Pro Leu His His Ser Thr Ile Leu His Pro Gly Val Ile Gly  
 145 150 155 160  
 cac atc gga atg gtg gtg ctg gtg cgg gga tta cta ctc ctc atc ccc 528  
 His Ile Gly Met Val Val Leu Val Arg Gly Leu Leu Leu Leu Ile Pro  
 165 170 175  
 ttc ctc att ctg ttg cga aaa ctt atc ttc tgc caa gcc acc atc ata 576  
 Phe Leu Ile Leu Leu Arg Lys Leu Ile Phe Cys Gln Ala Thr Ile Ile

180	185	190	
ggc cat gcc tat tgt gaa cat atg gct gtt gtg aaa ctt gcc tgc tca			624
Gly His Ala Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Ser			
195	200	205	
gaa acc aca gtc aat cga gct tat ggg ctg act gtg gcc ttg ctt gtg			672
Glu Thr Thr Val Asn Arg Ala Tyr Gly Leu Thr Val Ala Leu Leu Val			
210	215	220	
gtt ggg ctg gat gtc ctg gcc att ggt gtt tcc tat gcc cac att ctc			720
Val Gly Leu Asp Val Leu Ala Ile Gly Val Ser Tyr Ala His Ile Leu			
225	230	235	240
cag gca gtg ctg aag gta cca gga aat gag gcc cga ctt aag gcc ttt			768
Gln Ala Val Leu Lys Val Pro Gly Asn Glu Ala Arg Leu Lys Ala Phe			
245	250	255	
agc aca tgt ggc tct cat gtt tgt gtc atc ctg gtc ttc tat atc ccg			816
Ser Thr Cys Gly Ser His Val Cys Val Ile Leu Val Phe Tyr Ile Pro			
260	265	270	
gga atg ttc tcc ttc ctc act cac cgc ttt ggt cat cat gta ccc cat			864
Gly Met Phe Ser Phe Leu Thr His Arg Phe Gly His His Val Pro His			
275	280	285	
cac gtc cat gtt ctt ctg gcc ata ctg tat cgc ctt gtg cca cct gca			912
His Val His Val Leu Leu Ala Ile Leu Tyr Arg Leu Val Pro Pro Ala			
290	295	300	
ctc aat cct ctt gtc tat agg gtg aag acc cag aag atc cac cag tga			960
Leu Asn Pro Leu Val Tyr Arg Val Lys Thr Gln Lys Ile His Gln			
305	310	315	

&lt;210&gt; 376

&lt;211&gt; 319

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 376

Met Asn Leu Asp Ser Phe Phe Ser Phe Leu Leu Lys Ser Leu Ile Met	
1 5 10 15	
Ala Leu Ser Asn Ser Ser Trp Arg Leu Pro Gln Pro Ser Phe Phe Leu	
20 25 30	
Val Gly Ile Pro Gly Leu Glu Glu Ser Gln His Trp Ile Ala Leu Pro	
35 40 45	
Leu Gly Ile Leu Tyr Leu Leu Ala Leu Val Gly Asn Val Thr Ile Leu	
50 55 60	
Phe Ile Ile Trp Met Asp Pro Ser Leu His Gln Ser Met Tyr Leu Phe	
65 70 75 80	

Leu Ser Met Leu Ala Ala Ile Asp Leu Val Val Ala Ser Ser Thr Ala  
85 90 95

Pro Lys Ala Leu Ala Val Leu Leu Val Arg Ala Gln Glu Ile Gly Tyr  
100 105 110

Thr Val Cys Leu Ile Gln Met Phe Phe Thr His Ala Phe Ser Ser Met  
115 120 125

Glu Ser Gly Val Leu Val Ala Met Ala Leu Asp Arg Tyr Val Ala Ile  
130 135 140

Cys His Pro Leu His His Ser Thr Ile Leu His Pro Gly Val Ile Gly  
145 150 155 160

His Ile Gly Met Val Val Leu Val Arg Gly Leu Leu Leu Leu Ile Pro  
165 170 175

Phe Leu Ile Leu Leu Arg Lys Leu Ile Phe Cys Gln Ala Thr Ile Ile  
180 185 190

Gly His Ala Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Ser  
195 200 205

Glu Thr Thr Val Asn Arg Ala Tyr Gly Leu Thr Val Ala Leu Leu Val  
210 215 220

Val Gly Leu Asp Val Leu Ala Ile Gly Val Ser Tyr Ala His Ile Leu  
225 230 235 240

Gln Ala Val Leu Lys Val Pro Gly Asn Glu Ala Arg Leu Lys Ala Phe  
245 250 255

Ser Thr Cys Gly Ser His Val Cys Val Ile Leu Val Phe Tyr Ile Pro  
260 265 270

Gly Met Phe Ser Phe Leu Thr His Arg Phe Gly His His Val Pro His  
275 280 285

His Val His Val Leu Leu Ala Ile Leu Tyr Arg Leu Val Pro Pro Ala  
290 295 300

Leu Asn Pro Leu Val Tyr Arg Val Lys Thr Gln Lys Ile His Gln  
305 310 315



<210> 377  
 <211> 945  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (942)  
 <223>

<400> 377  
 atg tca gcc tcc aat atc acc tta aca cat cca act gcc ttc ttg ttg 48  
 Met Ser Ala Ser Asn Ile Thr Leu Thr His Pro Thr Ala Phe Leu Leu  
 1 5 10 15  
 gtg ggg att cca ggc ctg gaa cac ctg cac atc tgg atc tcc atc cct 96  
 Val Gly Ile Pro Gly Leu Glu His Leu His Ile Trp Ile Ser Ile Pro  
 20 25 30  
 ttc tgc tta gca tat aca ctg gcc ctg ctt gga aac tgc act ctc ctt 144  
 Phe Cys Leu Ala Tyr Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu  
 35 40 45  
 ctc atc atc cag gct gat gca gcc ctc cat gaa ccc atg tac ctc ttt 192  
 Leu Ile Ile Gln Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe  
 50 55 60  
 ctg gcc atg ttg gca gcc atc gac ctg gtc ctt tcc tcc tca gca ctg 240  
 Leu Ala Met Leu Ala Ala Ile Asp Leu Val Leu Ser Ser Ser Ala Leu  
 65 70 75 80  
 ccc aaa atg ctt gcc ata ttc tgg ttc agg gat cgg gag ata aac ttc 288  
 Pro Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Arg Glu Ile Asn Phe  
 85 90 95  
 ttt gcc tgt ctg gcc cag atg ttc ttc ctt cac tcc ttc tcc atc atg 336  
 Phe Ala Cys Leu Ala Gln Met Phe Phe Leu His Ser Phe Ser Ile Met  
 100 105 110  
 gag tca gca gtg ctg ctg gcc atg gcc ttt gac cgc tat gtg gct atc 384  
 Glu Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125  
 tgc aag cca ctg cac tac acc aag gtc ctg act ggg tcc ctc atc acc 432  
 Cys Lys Pro Leu His Tyr Thr Lys Val Leu Thr Gly Ser Leu Ile Thr  
 130 135 140  
 aag att ggc atg gct gct gtg gcc cgg gct gtg aca cta atg act cca 480  
 Lys Ile Gly Met Ala Ala Val Ala Arg Ala Val Thr Leu Met Thr Pro  
 145 150 155 160  
 ctc ccc ttc ctg ctg aga tgt ttc cac tac tgc cga ggc cca gtg atc 528  
 Leu Pro Phe Leu Leu Arg Cys Phe His Tyr Cys Arg Gly Pro Val Ile  
 165 170 175  
 gct cac tgc tac tgt gaa cac atg gct gtg gtg agg ctg gcg tgt ggg 576  
 Ala His Cys Tyr Cys Glu His Met Ala Val Val Arg Leu Ala Cys Gly  
 180 185 190  
 gac act agc ttc aac aat atc tat ggc atc gct gtg gcc atg ttt att 624

Asp Thr Ser Phe Asn Asn Ile Tyr Gly Ile Ala Val Ala Met Phe Ile  
 195 200 205

gtg gtg ttg gac ctg ctc ctt gtt atc ctg tct tat atc ttt att ctt 672  
 Val Val Leu Asp Leu Leu Leu Val Ile Leu Ser Tyr Ile Phe Ile Leu  
 210 215 220

cag gca gtt cta ctg ctt gcc tct cag gag gcc cac tac aag gca ttt 720  
 Gln Ala Val Leu Leu Leu Ala Ser Gln Glu Ala His Tyr Lys Ala Phe  
 225 230 235 240

ggg aca tgt gtc tct cat ata ggt gcc atc tta gcc ttc tac aca act 768  
 Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ala Phe Tyr Thr Thr  
 245 250 255

gtg gtc atc tct tca gtc atg cac cgt gta gcc cgc cat gct gcc cct 816  
 Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His Ala Ala Pro  
 260 265 270

cat gtc cac atc ctc ctt gcc aat ttc tat ctg ctc ttc cca ccc atg 864  
 His Val His Ile Leu Leu Ala Asn Phe Tyr Leu Leu Phe Pro Pro Met  
 275 280 285

gtc aat ccc ata atc tat ggt gtc aag acc aag caa atc cgt gag agc 912  
 Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Ser  
 290 295 300

atc ttg gga gta ttc cca aga aag gat atg tag 945  
 Ile Leu Gly Val Phe Pro Arg Lys Asp Met  
 305 310

<210> 378  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 378

Met Ser Ala Ser Asn Ile Thr Leu Thr His Pro Thr Ala Phe Leu Leu  
 1 5 10 15

Val Gly Ile Pro Gly Leu Glu His Leu His Ile Trp Ile Ser Ile Pro  
 20 25 30

Phe Cys Leu Ala Tyr Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu  
 35 40 45

Leu Ile Ile Gln Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe  
 50 55 60

Leu Ala Met Leu Ala Ala Ile Asp Leu Val Leu Ser Ser Ser Ala Leu  
 65 70 75 80

Pro Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Arg Glu Ile Asn Phe  
 85 90 95

Phe Ala Cys Leu Ala Gln Met Phe Phe Leu His Ser Phe Ser Ile Met  
 100 105 110

Glu Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125

Cys Lys Pro Leu His Tyr Thr Lys Val Leu Thr Gly Ser Leu Ile Thr  
 130 135 140

Lys Ile Gly Met Ala Ala Val Ala Arg Ala Val Thr Leu Met Thr Pro  
 145 150 155 160

Leu Pro Phe Leu Leu Arg Cys Phe His Tyr Cys Arg Gly Pro Val Ile  
 165 170 175

Ala His Cys Tyr Cys Glu His Met Ala Val Val Arg Leu Ala Cys Gly  
 180 185 190

Asp Thr Ser Phe Asn Asn Ile Tyr Gly Ile Ala Val Ala Met Phe Ile  
 195 200 205

Val Val Leu Asp Leu Leu Leu Val Ile Leu Ser Tyr Ile Phe Ile Leu  
 210 215 220

Gln Ala Val Leu Leu Leu Ala Ser Gln Glu Ala His Tyr Lys Ala Phe  
 225 230 235 240

Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ala Phe Tyr Thr Thr  
 245 250 255

Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His Ala Ala Pro  
 260 265 270

His Val His Ile Leu Leu Ala Asn Phe Tyr Leu Leu Phe Pro Pro Met  
 275 280 285

Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Ser  
 290 295 300

Ile Leu Gly Val Phe Pro Arg Lys Asp Met  
 305 310

<210> 379  
 <211> 945  
 <212> DNA

&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(942)

&lt;223&gt;

&lt;400&gt; 379

atg .ctt ccc tct aat atc acc tca aca cat cca gct gtc ttt ttg ttg	48
Met Leu Pro Ser Asn Ile Thr Ser Thr His Pro Ala Val Phe Leu Leu	
1 5 10 15	
gta gga att cct ggt ttg gaa cac ctg cat gcc tgg atc tcc atc ccc	96
Val Gly Ile Pro Gly Leu Glu His Leu His Ala Trp Ile Ser Ile Pro	
20 25 30	
ttc tgc ttt gct tat act ctg gcc ctg cta ggc aac tgt acc ctt ctc	144
Phe Cys Phe Ala Tyr Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu	
35 40 45	
ttc att atc cgg gct gat gca gcc ctc cat gaa ccc atg tac ctc ttt	192
Phe Ile Ile Arg Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe	
50 55 60	
ctg gcc atg ttg gca acc att gac ttg gtt ctt tct tct aca acg ctg	240
Leu Ala Met Leu Ala Thr Ile Asp Leu Val Leu Ser Ser Thr Thr Leu	
65 70 75 80	
ccc aaa atg ctt gcc ata ttc tgg ttc agg gat cag gag atc aac ttc	288
Pro Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Gln Glu Ile Asn Phe	
85 90 95	
ttt gcc tgt ctg gtc cag atg ttc ttc ctt cac tcc ttc tcc atc atg	336
Phe Ala Cys Leu Val Gln Met Phe Phe Leu His Ser Phe Ser Ile Met	
100 105 110	
gag tca gca gtg ctg ctg gcc atg gcc ttt gac cgc tat gtg gcc atc	384
Glu Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile	
115 120 125	
tgc aag cca ttg cac tac acg acg gtc ctg act ggg tcc ctc atc acc	432
Cys Lys Pro Leu His Tyr Thr Thr Val Leu Thr Gly Ser Leu Ile Thr	
130 135 140	
aag att ggc atg gct gct gtg gcc tgg gct gtg aca cta atg act cca	480
Lys Ile Gly Met Ala Ala Val Ala Trp Ala Val Thr Leu Met Thr Pro	
145 150 155 160	
ctc ccc ttc ctg ctc aga cgc ttc cac tac tgc cga ggc cca gtg att	528
Leu Pro Phe Leu Leu Arg Arg Phe His Tyr Cys Arg Gly Pro Val Ile	
165 170 175	
gcc cat tgc tac tgt gaa cac atg gct gtg gta agg ctg gcg tgt ggg	576
Ala His Cys Tyr Cys Glu His Met Ala Val Val Arg Leu Ala Cys Gly	
180 185 190	
gac act agc ttc aac aat atc tat ggc att gct gtg gcc atg ttt att	624
Asp Thr Ser Phe Asn Asn Ile Tyr Gly Ile Ala Val Ala Met Phe Ile	
195 200 205	

gtg gtg ttg gac ctg ctc ttt gtt atc ctg tct tat gtc ttc atc ctt 672  
 Val Val Leu Asp Leu Leu Phe Val Ile Leu Ser Tyr Val Phe Ile Leu  
 210 215 220

cag gca gtt ctc cag ctt gcc tct cag gag gcc cgc tac aag gca ttt 720  
 Gln Ala Val Leu Gln Leu Ala Ser Gln Glu Ala Arg Tyr Lys Ala Phe  
 225 230 235 240

ggg aca tgt gtg tct cac ata ggt gcc atc ctg tcc acc tac act cca 768  
 Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ser Thr Tyr Thr Pro  
 245 250 255

gta gtc atc tct tca gtc atg cac cgt gta gcc cgc cat gct gcc cct 816  
 Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His Ala Ala Pro  
 260 265 270

cgt gtc cac ata ctc ctt gct att ttc tat ctc ctt ttc cca ccc atg 864  
 Arg Val His Ile Leu Leu Ala Ile Phe Tyr Leu Leu Phe Pro Pro Met  
 275 280 285

gtc aat cct atc ata tat gga gtc aag acc aag cag att cgt gag tat 912  
 Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Tyr  
 290 295 300

gtg ctc agt cta ttc cag aga aag aac atg tag 945  
 Val Leu Ser Leu Phe Gln Arg Lys Asn Met  
 305 310

<210> 380  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 380

Met Leu Pro Ser Asn Ile Thr Ser Thr His Pro Ala Val Phe Leu Leu  
 1 5 10 15

Val Gly Ile Pro Gly Leu Glu His Leu His Ala Trp Ile Ser Ile Pro  
 20 25 30

Phe Cys Phe Ala Tyr Thr Leu Ala Leu Leu Gly Asn Cys Thr Leu Leu  
 35 40 45

Phe Ile Ile Arg Ala Asp Ala Ala Leu His Glu Pro Met Tyr Leu Phe  
 50 55 60

Leu Ala Met Leu Ala Thr Ile Asp Leu Val Leu Ser Ser Thr Thr Leu  
 65 70 75 80

Pro Lys Met Leu Ala Ile Phe Trp Phe Arg Asp Gln Glu Ile Asn Phe  
 85 90 95

Phe Ala Cys Leu Val Gln Met Phe Phe Leu His Ser Phe Ser Ile Met

100 105 110  
 Glu Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125  
 Cys Lys Pro Leu His Tyr Thr Thr Val Leu Thr Gly Ser Leu Ile Thr  
 130 135 140  
 Lys Ile Gly Met Ala Ala Val Ala Trp Ala Val Thr Leu Met Thr Pro  
 145 150 155 160  
 Leu Pro Phe Leu Leu Arg Arg Phe His Tyr Cys Arg Gly Pro Val Ile  
 165 170 175  
 Ala His Cys Tyr Cys Glu His Met Ala Val Val Arg Leu Ala Cys Gly  
 180 185 190  
 Asp Thr Ser Phe Asn Asn Ile Tyr Gly Ile Ala Val Ala Met Phe Ile  
 195 200 205  
 Val Val Leu Asp Leu Leu Phe Val Ile Leu Ser Tyr Val Phe Ile Leu  
 210 215 220  
 Gln Ala Val Leu Gln Leu Ala Ser Gln Glu Ala Arg Tyr Lys Ala Phe  
 225 230 235 240  
 Gly Thr Cys Val Ser His Ile Gly Ala Ile Leu Ser Thr Tyr Thr Pro  
 245 250 255  
 Val Val Ile Ser Ser Val Met His Arg Val Ala Arg His Ala Ala Pro  
 260 265 270  
 Arg Val His Ile Leu Leu Ala Ile Phe Tyr Leu Leu Phe Pro Pro Met  
 275 280 285  
 Val Asn Pro Ile Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Tyr  
 290 295 300  
 Val Leu Ser Leu Phe Gln Arg Lys Asn Met  
 305 310

<210> 381  
 <211> 957  
 <212> DNA  
 <213> Homo Sapiens

<220>

&lt;221&gt; CDS

&lt;222&gt; (1) .. (954)

&lt;223&gt;

&lt;400&gt; 381

atg cct act gta aac cac agt ggc act agc cac aca gtc ttc cac ttg	48
Met Pro Thr Val Asn His Ser Gly Thr Ser His Thr Val Phe His Leu	
1 5 10 15	
ctg ggc atc cct ggc cta cag gac cag cac atg tgg att tct atc cca	96
Leu Gly Ile Pro Gly Leu Gln Asp Gln His Met Trp Ile Ser Ile Pro	
20 25 30	
ttc ttc att tcc tat gtc acc gcc ctt ctt ggg aac agc ctg ctc atc	144
Phe Phe Ile Ser Tyr Val Thr Ala Leu Leu Gly Asn Ser Leu Leu Ile	
35 40 45	
ttc att atc ctc aca aag cgc agc ctc cat gaa ccc atg tac ctc ttc	192
Phe Ile Ile Leu Thr Lys Arg Ser Leu His Glu Pro Met Tyr Leu Phe	
50 55 60	
ctc tgc atg ctg gct gga gca gac att gtc ctc tcc acg tgc acc att	240
Leu Cys Met Leu Ala Gly Ala Asp Ile Val Leu Ser Thr Cys Thr Ile	
65 70 75 80	
cct cag gcc tta gct atc ttc tgg ttc cgt gct ggg gac atc tcc ctg	288
Pro Gln Ala Leu Ala Ile Phe Trp Phe Arg Ala Gly Asp Ile Ser Leu	
85 90 95	
gat cgt tgc atc act cag ctc ttc ttc atc cat tcc acc ttc atc tct	336
Asp Arg Cys Ile Thr Gln Leu Phe Phe Ile His Ser Thr Phe Ile Ser	
100 105 110	
gag tca ggg atc ttg ctg gtg atg gcc ttt gac cac tat att gcc ata	384
Glu Ser Gly Ile Leu Leu Val Met Ala Phe Asp His Tyr Ile Ala Ile	
115 120 125	
tgc tac cca ctg agg tac acc acc att ctt aca aat gct ctg atc aag	432
Cys Tyr Pro Leu Arg Tyr Thr Thr Ile Leu Thr Asn Ala Leu Ile Lys	
130 135 140	
aaa att tgt gtg act gtc tct ctg aga agt tat ggt aca att ttc cct	480
Lys Ile Cys Val Thr Val Ser Leu Arg Ser Tyr Gly Thr Ile Phe Pro	
145 150 155 160	
atc ata ttt ctt tta aaa aga ttg act ttc tgc cag aat aat att att	528
Ile Ile Phe Leu Leu Lys Arg Leu Thr Phe Cys Gln Asn Asn Ile Ile	
165 170 175	
cca cac acc ttt tgt gaa cac att ggc cta gcc aaa tat gca tgt aat	576
Pro His Thr Phe Cys Glu His Ile Gly Leu Ala Lys Tyr Ala Cys Asn	
180 185 190	
gac att cga ata aac att tgg tat ggg ttt tcc att cta atg tgc acg	624
Asp Ile Arg Ile Asn Ile Trp Tyr Gly Phe Ser Ile Leu Met Ser Thr	
195 200 205	
gtg gtc tta gat gtt gta cta att ttt att tcc tat atg ctg att ctc	672
Val Val Leu Asp Val Val Leu Ile Phe Ile Ser Tyr Met Leu Ile Leu	
210 215 220	

cat gct gtc ttc cac atg cct tct cca gat gct tgc cac aaa gct ctc 720  
 His Ala Val Phe His Met Pro Ser Pro Asp Ala Cys His Lys Ala Leu  
 225 230 235 240  
 aac aca ttt ggc tcc cat gtc tgc atc atc atc ctc ttt tat ggg tct 768  
 Asn Thr Phe Gly Ser His Val Cys Ile Ile Ile Leu Phe Tyr Gly Ser  
 245 250 255  
 ggc atc ttc aca atc ctt acc cag agg ttt gga cgc cac att cca cct 816  
 Gly Ile Phe Thr Ile Leu Thr Gln Arg Phe Gly Arg His Ile Pro Pro  
 260 265 270  
 tgt atc cac atc ccg ttg gct aat gtc tgc att ctg gct cca cct atg 864  
 Cys Ile His Ile Pro Leu Ala Asn Val Cys Ile Leu Ala Pro Pro Met  
 275 280 285  
 ctg aat ccc att att tat ggg atc aaa acc aag caa atc cag gaa cag 912  
 Leu Asn Pro Ile Ile Tyr Gly Ile Lys Thr Lys Gln Ile Gln Glu Gln  
 290 295 300  
 gtg gtt cag ttt ttg ttt ata aaa cag aaa ata act ttg gtt taa 957  
 Val Val Gln Phe Leu Phe Ile Lys Gln Lys Ile Thr Leu Val  
 305 310 315  
  
 <210> 382  
 <211> 318  
 <212> PRT  
 <213> Homo Sapiens  
  
 <400> 382  
 Met Pro Thr Val Asn His Ser Gly Thr Ser His Thr Val Phe His Leu  
 1 5 10 15  
 Leu Gly Ile Pro Gly Leu Gln Asp Gln His Met Trp Ile Ser Ile Pro  
 20 25 30  
 Phe Phe Ile Ser Tyr Val Thr Ala Leu Leu Gly Asn Ser Leu Leu Ile  
 35 40 45  
 Phe Ile Ile Leu Thr Lys Arg Ser Leu His Glu Pro Met Tyr Leu Phe  
 50 55 60  
 Leu Cys Met Leu Ala Gly Ala Asp Ile Val Leu Ser Thr Cys Thr Ile  
 65 70 75 80  
 Pro Gln Ala Leu Ala Ile Phe Trp Phe Arg Ala Gly Asp Ile Ser Leu  
 85 90 95  
 Asp Arg Cys Ile Thr Gln Leu Phe Phe Ile His Ser Thr Phe Ile Ser  
 100 105 110



Glu Ser Gly Ile Leu Leu Val Met Ala Phe Asp His Tyr Ile Ala Ile  
 115 120 125

Cys Tyr Pro Leu Arg Tyr Thr Thr Ile Leu Thr Asn Ala Leu Ile Lys  
 130 135 140

Lys Ile Cys Val Thr Val Ser Leu Arg Ser Tyr Gly Thr Ile Phe Pro  
 145 150 155 160

Ile Ile Phe Leu Leu Lys Arg Leu Thr Phe Cys Gln Asn Asn Ile Ile  
 165 170 175

Pro His Thr Phe Cys Glu His Ile Gly Leu Ala Lys Tyr Ala Cys Asn  
 180 185 190

Asp Ile Arg Ile Asn Ile Trp Tyr Gly Phe Ser Ile Leu Met Ser Thr  
 195 200 205

Val Val Leu Asp Val Val Leu Ile Phe Ile Ser Tyr Met Leu Ile Leu  
 210 215 220

His Ala Val Phe His Met Pro Ser Pro Asp Ala Cys His Lys Ala Leu  
 225 230 235 240

Asn Thr Phe Gly Ser His Val Cys Ile Ile Ile Leu Phe Tyr Gly Ser  
 245 250 255

Gly Ile Phe Thr Ile Leu Thr Gln Arg Phe Gly Arg His Ile Pro Pro  
 260 265 270

Cys Ile His Ile Pro Leu Ala Asn Val Cys Ile Leu Ala Pro Pro Met  
 275 280 285

Leu Asn Pro Ile Ile Tyr Gly Ile Lys Thr Lys Gln Ile Gln Glu Gln  
 290 295 300

Val Val Gln Phe Leu Phe Ile Lys Gln Lys Ile Thr Leu Val  
 305 310 315

<210> 383  
 <211> 966  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (963)  
 <223>

<400> 383  
 atg tct ggg gac aac agc tcc agc ctg acc cca gga ttc ttt atc ttg 48  
 Met Ser Gly Asp Asn Ser Ser Ser Leu Thr Pro Gly Phe Phe Ile Leu  
 1 5 10 15  
 aat ggc gtt cct ggg ctg gaa gcc aca cac atc tgg atc tcc ctg cca 96  
 Asn Gly Val Pro Gly Leu Glu Ala Thr His Ile Trp Ile Ser Leu Pro  
 20 25 30  
 ttc tgc ttt atg tac atc att gct gtc gtg ggg aac tgt ggg ctc atc 144  
 Phe Cys Phe Met Tyr Ile Ile Ala Val Val Gly Asn Cys Gly Leu Ile  
 35 40 45  
 tgc ctc atc agc cat gag gag gcc ctg cac cgg ccc atg tac tac ttc 192  
 Cys Leu Ile Ser His Glu Glu Ala Leu His Arg Pro Met Tyr Tyr Phe  
 50 55 60  
 ctg gcc ctg ctc tcc ttc act gat gtc acc ttg tgc acc acc atg gta 240  
 Leu Ala Leu Leu Ser Phe Thr Asp Val Thr Leu Cys Thr Thr Met Val  
 65 70 75 80  
 cct aat atg ctg tgc ata ttc tgg ttc aac ctc aag gag att gac ttt 288  
 Pro Asn Met Leu Cys Ile Phe Trp Phe Asn Leu Lys Glu Ile Asp Phe  
 85 90 95  
 aac gcc tgc ctg gcc cag atg ttt ttt gtc cat atg ctg aca ggg atg 336  
 Asn Ala Cys Leu Ala Gln Met Phe Phe Val His Met Leu Thr Gly Met  
 100 105 110  
 gag tct ggg gtg ctc atg ctc atg gcc ctg gac cgc tat gtg gcc atc 384  
 Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp Arg Tyr Val Ala Ile  
 115 120 125  
 tgc tac ccc tta cgc tat gcc acc atc ctt acc aac cct gtc atc gcc 432  
 Cys Tyr Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Pro Val Ile Ala  
 130 135 140  
 aag gct ggt ctt gcc acc ttc ttg agg aat gtg atg ctc atc atc cca 480  
 Lys Ala Gly Leu Ala Thr Phe Leu Arg Asn Val Met Leu Ile Ile Pro  
 145 150 155 160  
 ttc act ctc ctc acc aag cgc ctg ccc tat tgc cgg ggg aac ttc atc 528  
 Phe Thr Leu Leu Thr Lys Arg Leu Pro Tyr Cys Arg Gly Asn Phe Ile  
 165 170 175  
 ccc cac acc tac tgt gac cat atg tct gtg gcc aag gta tcc tgt ggc 576  
 Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Val Ser Cys Gly  
 180 185 190  
 aat ttc aag gtc aat gct att tat ggt ctg atg gtt gct ctc ctg att 624  
 Asn Phe Lys Val Asn Ala Ile Tyr Gly Leu Met Val Ala Leu Leu Ile  
 195 200 205  
 ggt gtg ttt gat atc tgc tgt atc tct gta tct tac act atg att ttg 672  
 Gly Val Phe Asp Ile Cys Cys Ile Ser Val Ser Tyr Thr Met Ile Leu  
 210 215 220  
 cag gct gtt atg agc ctg tca tca gca gat gct cgt cac aaa gcc ttc 720  
 Gln Ala Val Met Ser Leu Ser Ser Ala Asp Ala Arg His Lys Ala Phe

225	230	235	240	
agc acc tgc aca tct cac atg tgt tcc att gtg atc acc tat gtt gct				768
Ser Thr Cys Thr	Ser His Met Cys	Ser Ile Val Ile Thr Tyr	Val Ala	
	245	250	255	
gct ttt ttc act ttt ttc act cat cgt ttt gta gga cac aat atc cca				816
Ala Phe Phe Thr Phe Phe Thr His Arg Phe Val Gly His Asn Ile Pro				
	260	265	270	
aac cac ata cac atc atc gtg gcc aac ctt tat ctg cta ctg cct cct				864
Asn His Ile His Ile Ile Val Ala Asn Leu Tyr Leu Leu Leu Pro Pro				
	275	280	285	
acc atg aac cca att gtt tat gga gtc aag acc aag cag att cag gaa				912
Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Gln Glu				
	290	295	300	
ggt gta att aaa ttt tta ctt gga gac aag gtt agt ttt acc tat gac				960
Gly Val Ile Lys Phe Leu Leu Gly Asp Lys Val Ser Phe Thr Tyr Asp				
305	310	315	320	
aaa tga				966
Lys				

<210> 384  
 <211> 321  
 <212> PRT  
 <213> Homo Sapiens

<400> 384

Met Ser Gly Asp Asn Ser Ser Ser Leu Thr Pro Gly Phe Phe Ile Leu	
1	5 10 15
Asn Gly Val Pro Gly Leu Glu Ala Thr His Ile Trp Ile Ser Leu Pro	
	20 25 30
Phe Cys Phe Met Tyr Ile Ile Ala Val Val Gly Asn Cys Gly Leu Ile	
	35 40 45
Cys Leu Ile Ser His Glu Glu Ala Leu His Arg Pro Met Tyr Tyr Phe	
	50 55 60
Leu Ala Leu Leu Ser Phe Thr Asp Val Thr Leu Cys Thr Thr Met Val	
65	70 75 80
Pro Asn Met Leu Cys Ile Phe Trp Phe Asn Leu Lys Glu Ile Asp Phe	
	85 90 95
Asn Ala Cys Leu Ala Gln Met Phe Phe Val His Met Leu Thr Gly Met	
	100 105 110

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Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp Arg Tyr Val Ala Ile  
 115 120 125

Cys Tyr Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Pro Val Ile Ala  
 130 135 140

Lys Ala Gly Leu Ala Thr Phe Leu Arg Asn Val Met Leu Ile Ile Pro  
 145 150 155 160

Phe Thr Leu Leu Thr Lys Arg Leu Pro Tyr Cys Arg Gly Asn Phe Ile  
 165 170 175

Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Val Ser Cys Gly  
 180 185 190

Asn Phe Lys Val Asn Ala Ile Tyr Gly Leu Met Val Ala Leu Leu Ile  
 195 200 205

Gly Val Phe Asp Ile Cys Cys Ile Ser Val Ser Tyr Thr Met Ile Leu  
 210 215 220

Gln Ala Val Met Ser Leu Ser Ser Ala Asp Ala Arg His Lys Ala Phe  
 225 230 235 240

Ser Thr Cys Thr Ser His Met Cys Ser Ile Val Ile Thr Tyr Val Ala  
 245 250 255

Ala Phe Phe Thr Phe Phe Thr His Arg Phe Val Gly His Asn Ile Pro  
 260 265 270

Asn His Ile His Ile Ile Val Ala Asn Leu Tyr Leu Leu Leu Pro Pro  
 275 280 285

Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Gln Glu  
 290 295 300

Gly Val Ile Lys Phe Leu Leu Gly Asp Lys Val Ser Phe Thr Tyr Asp  
 305 310 315 320

Lys

<210> 385  
 <211> 984  
 <212> DNA  
 <213> Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) .. (981)

&lt;223&gt;

&lt;400&gt; 385

atg	ctt	cat	acc	aac	aat	aca	cag	ttt	cac	cct	tcc	acc	ttc	ctc	gta	48
Met	Leu	His	Thr	Asn	Asn	Thr	Gln	Phe	His	Pro	Ser	Thr	Phe	Leu	Val	
1				5				10						15		

gtg	ggg	gtc	cca	ggg	ctg	gaa	gat	gtg	cat	gta	tgg	att	ggc	ttc	ccc	96
Val	Gly	Val	Pro	Gly	Leu	Glu	Asp	Val	His	Val	Trp	Ile	Gly	Phe	Pro	
			20					25					30			

ttc	ttt	gcg	gtg	tat	cta	aca	gcc	ctt	cta	ggg	aac	atc	att	atc	ctg	144
Phe	Phe	Ala	Val	Tyr	Leu	Thr	Ala	Leu	Leu	Gly	Asn	Ile	Ile	Ile	Leu	
		35					40					45				

ttt	gtg	ata	cag	act	gaa	cag	agc	ctc	cac	caa	ccc	atg	ttt	tac	ttc	192
Phe	Val	Ile	Gln	Thr	Glu	Gln	Ser	Leu	His	Gln	Pro	Met	Phe	Tyr	Phe	
	50					55					60					

cta	gcc	atg	ttg	gcc	ggc	act	gat	ctg	ggc	ttg	tct	aca	gca	acc	atc	240
Leu	Ala	Met	Leu	Ala	Gly	Thr	Asp	Leu	Gly	Leu	Ser	Thr	Ala	Thr	Ile	
65					70					75					80	

ccc	aag	atg	ctg	gga	att	ttc	tgg	ttt	aat	ctt	gga	gag	att	gca	ttt	288
Pro	Lys	Met	Leu	Gly	Ile	Phe	Trp	Phe	Asn	Leu	Gly	Glu	Ile	Ala	Phe	
				85					90					95		

ggg	gcc	tgc	atc	aca	cag	atg	tat	acc	att	cat	ata	tgc	act	ggc	ctg	336
Gly	Ala	Cys	Ile	Thr	Gln	Met	Tyr	Thr	Ile	His	Ile	Cys	Thr	Gly	Leu	
			100					105					110			

gag	tct	gtg	gta	ctg	aca	gtc	acg	ggc	ata	gat	cgc	tat	att	gcc	atc	384
Glu	Ser	Val	Val	Leu	Thr	Val	Thr	Gly	Ile	Asp	Arg	Tyr	Ile	Ala	Ile	
		115					120					125				

tgc	aac	ccc	ctg	aga	tat	agc	atg	atc	ctt	acc	aac	aag	gta	ata	gcc	432
Cys	Asn	Pro	Leu	Arg	Tyr	Ser	Met	Ile	Leu	Thr	Asn	Lys	Val	Ile	Ala	
	130					135					140					

att	ctg	ggc	ata	gtc	atc	att	gtc	agg	act	ttg	gta	ttt	gtg	act	cca	480
Ile	Leu	Gly	Ile	Val	Ile	Ile	Val	Arg	Thr	Leu	Val	Phe	Val	Thr	Pro	
145				150					155						160	

ttc	aca	ttt	ctc	acc	ctg	aga	ttg	cct	ttc	tgt	ggg	gtc	cgg	att	atc	528
Phe	Thr	Phe	Leu	Thr	Leu	Arg	Leu	Pro	Phe	Cys	Gly	Val	Arg	Ile	Ile	
			165					170						175		

cct	cat	acc	tat	tgt	gaa	cac	atg	ggc	ttg	gca	aag	tta	gct	tgt	gcc	576
Pro	His	Thr	Tyr	Cys	Glu	His	Met	Gly	Leu	Ala	Lys	Leu	Ala	Cys	Ala	
			180					185					190			

agt	att	aat	gtt	ata	tat	gga	ttg	att	gcc	ttc	tca	gtg	gga	tac	att	624
Ser	Ile	Asn	Val	Ile	Tyr	Gly	Leu	Ile	Ala	Phe	Ser	Val	Gly	Tyr	Ile	
		195					200					205				

gac	att	tct	gtg	att	gga	ttt	tcc	tat	gtc	cag	atc	ctc	cga	gct	gtc	672
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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Asp Ile Ser Val Ile Gly Phe Ser Tyr Val Gln Ile Leu Arg Ala Val  
 210 215 220

ttc cat ctc cca gcc tgg gat gcc cgg ctt aag gca ctc agc aca tgt 720  
 Phe His Leu Pro Ala Trp Asp Ala Arg Leu Lys Ala Leu Ser Thr Cys  
 225 230 235 240

ggc tct cac gtc tgt gtt atg ttg gct ttc tac ctg cca gcc ctc ttt 768  
 Gly Ser His Val Cys Val Met Leu Ala Phe Tyr Leu Pro Ala Leu Phe  
 245 250 255

tcc ttc atg aca cac cgc ttt ggc cac aac atc cct cat tac atc cac 816  
 Ser Phe Met Thr His Arg Phe Gly His Asn Ile Pro His Tyr Ile His  
 260 265 270

att ctt ctg gcc aat ctg tat gtg gtt ttt ccc cct gct ctt aac tct 864  
 Ile Leu Leu Ala Asn Leu Tyr Val Val Phe Pro Pro Ala Leu Asn Ser  
 275 280 285

gtt atc tat ggg gtc aaa aca aaa cag ata cga gag cag gta ctt agg 912  
 Val Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gln Val Leu Arg  
 290 295 300

ata ctc aac cct aaa agc ttt tgg cat ttt gac ccc aag agg atc ttc 960  
 Ile Leu Asn Pro Lys Ser Phe Trp His Phe Asp Pro Lys Arg Ile Phe  
 305 310 315 320

cac aac aat tca gtt aga caa taa 984  
 His Asn Asn Ser Val Arg Gln  
 325

<210> 386  
 <211> 327  
 <212> PRT  
 <213> Homo Sapiens

<400> 386

Met Leu His Thr Asn Asn Thr Gln Phe His Pro Ser Thr Phe Leu Val  
 1 5 10 15

Val Gly Val Pro Gly Leu Glu Asp Val His Val Trp Ile Gly Phe Pro  
 20 25 30

Phe Phe Ala Val Tyr Leu Thr Ala Leu Leu Gly Asn Ile Ile Ile Leu  
 35 40 45

Phe Val Ile Gln Thr Glu Gln Ser Leu His Gln Pro Met Phe Tyr Phe  
 50 55 60

Leu Ala Met Leu Ala Gly Thr Asp Leu Gly Leu Ser Thr Ala Thr Ile  
 65 70 75 80

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gly Glu Ile Ala Phe  
 85 90 95

Gly Ala Cys Ile Thr Gln Met Tyr Thr Ile His Ile Cys Thr Gly Leu  
 100 105 110

Glu Ser Val Val Leu Thr Val Thr Gly Ile Asp Arg Tyr Ile Ala Ile  
 115 120 125

Cys Asn Pro Leu Arg Tyr Ser Met Ile Leu Thr Asn Lys Val Ile Ala  
 130 135 140

Ile Leu Gly Ile Val Ile Ile Val Arg Thr Leu Val Phe Val Thr Pro  
 145 150 155 160

Phe Thr Phe Leu Thr Leu Arg Leu Pro Phe Cys Gly Val Arg Ile Ile  
 165 170 175

Pro His Thr Tyr Cys Glu His Met Gly Leu Ala Lys Leu Ala Cys Ala  
 180 185 190

Ser Ile Asn Val Ile Tyr Gly Leu Ile Ala Phe Ser Val Gly Tyr Ile  
 195 200 205

Asp Ile Ser Val Ile Gly Phe Ser Tyr Val Gln Ile Leu Arg Ala Val  
 210 215 220

Phe His Leu Pro Ala Trp Asp Ala Arg Leu Lys Ala Leu Ser Thr Cys  
 225 230 235 240

Gly Ser His Val Cys Val Met Leu Ala Phe Tyr Leu Pro Ala Leu Phe  
 245 250 255

Ser Phe Met Thr His Arg Phe Gly His Asn Ile Pro His Tyr Ile His  
 260 265 270

Ile Leu Leu Ala Asn Leu Tyr Val Val Phe Pro Pro Ala Leu Asn Ser  
 275 280 285

Val Ile Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gln Val Leu Arg  
 290 295 300

Ile Leu Asn Pro Lys Ser Phe Trp His Phe Asp Pro Lys Arg Ile Phe  
 305 310 315 320

His Asn Asn Ser Val Arg Gln  
 325

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<210> 387  
 <211> 963  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(960)  
 <223>

<400> 387  
 atg tca ttt cta aat ggc acc agc cta act cca gct tca ttc atc cta 48  
 Met Ser Phe Leu Asn Gly Thr Ser Leu Thr Pro Ala Ser Phe Ile Leu  
 1 5 10 15

aat ggc atc cct ggt ttg gaa gat gtg cat ttg tgg atc tcc ttc cca 96  
 Asn Gly Ile Pro Gly Leu Glu Asp Val His Leu Trp Ile Ser Phe Pro  
 20 25 30

ctg tgt acc atg tac agc att gct att aca ggg aac ttc ggc ctt atg 144  
 Leu Cys Thr Met Tyr Ser Ile Ala Ile Thr Gly Asn Phe Gly Leu Met  
 35 40 45

tac ctc atc tac tgt gat gag gcc tta cac aga cct atg tat gtc ttc 192  
 Tyr Leu Ile Tyr Cys Asp Glu Ala Leu His Arg Pro Met Tyr Val Phe  
 50 55 60

ctt gcc ctt ctt tcc ttc aca gat gtg ctc atg tgc acc agc acc ctt 240  
 Leu Ala Leu Leu Ser Phe Thr Asp Val Leu Met Cys Thr Ser Thr Leu  
 65 70 75 80

ccc aac act ctc ttc ata ttg tgg ttt aat ctc aag gag att gat ttt 288  
 Pro Asn Thr Leu Phe Ile Leu Trp Phe Asn Leu Lys Glu Ile Asp Phe  
 85 90 95

aaa gcc tgc ctc gcc cag atg ttc ttt gtg cac acc ttc aca ggg atg 336  
 Lys Ala Cys Leu Ala Gln Met Phe Phe Val His Thr Phe Thr Gly Met  
 100 105 110

gag tct ggg gtg ctc atg ctc atg gcc ctg gac cac tgt gtg gcc atc 384  
 Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp His Cys Val Ala Ile  
 115 120 125

tgc ttc cct ctg cgt tat gcc acc atc ctc act aat tca gtc att gct 432  
 Cys Phe Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Ser Val Ile Ala  
 130 135 140

aaa gct ggg ttc ctc act ttt ctt agg ggt gtg atg ctt gtt atc cct 480  
 Lys Ala Gly Phe Leu Thr Phe Leu Arg Gly Val Met Leu Val Ile Pro  
 145 150 155 160

tcc act ttc ctc acc aag cgc ctt cca tac tgc aag ggc aac gtc ata 528  
 Ser Thr Phe Leu Thr Lys Arg Leu Pro Tyr Cys Lys Gly Asn Val Ile  
 165 170 175

ccc cac acc tac tgt gac cac atg tct gtg gcc aag ata tct tgt ggt 576  
 Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Ile Ser Cys Gly  
 180 185 190



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aat gtc agg gtt aac gcc atc tat ggt ttg ata gtt gcc ctg ctg att      624
Asn Val Arg Val Asn Ala Ile Tyr Gly Leu Ile Val Ala Leu Leu Ile
      195                      200                      205

ggg ggc ttt gat atc ctg tgc att aca atc tcc tac act atg att ctt      672
Gly Gly Phe Asp Ile Leu Cys Ile Thr Ile Ser Tyr Thr Met Ile Leu
      210                      215                      220

caa gca gtt gtg agt cta tca tca gca gat gct cga cag aag gcc ttc      720
Gln Ala Val Val Ser Leu Ser Ser Ala Asp Ala Arg Gln Lys Ala Phe
      225                      230                      235                      240

agc acc tgc act gcc cac ttc tgt gcc ata gtc ctc acc tat gtt cca      768
Ser Thr Cys Thr Ala His Phe Cys Ala Ile Val Leu Thr Tyr Val Pro
      245                      250                      255

gcc ttc ttt acc ttc ttt aca cac cat ttt ggg gga cac acc att cct      816
Ala Phe Phe Thr Phe Phe Thr His His Phe Gly Gly His Thr Ile Pro
      260                      265                      270

cta cac ata cat att att atg gct aat ctc tac cta cta atg cct ccc      864
Leu His Ile His Ile Ile Met Ala Asn Leu Tyr Leu Leu Met Pro Pro
      275                      280                      285

aca atg aac cct att gtg tat ggg gtg aaa acc agg cag gta cga gaa      912
Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Arg Gln Val Arg Glu
      290                      295                      300

agt gtc att agg ttc ttt ctt aag gga aag gac aat tct cat aac ttt      960
Ser Val Ile Arg Phe Phe Leu Lys Gly Lys Asp Asn Ser His Asn Phe
      305                      310                      315                      320

taa                                                                    963

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<210> 388
<211> 320
<212> PRT
<213> Homo Sapiens

<400> 388

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Met Ser Phe Leu Asn Gly Thr Ser Leu Thr Pro Ala Ser Phe Ile Leu
1                      5                      10                      15

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Asn Gly Ile Pro Gly Leu Glu Asp Val His Leu Trp Ile Ser Phe Pro
20                      25                      30

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Leu Cys Thr Met Tyr Ser Ile Ala Ile Thr Gly Asn Phe Gly Leu Met
35                      40                      45

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```

Tyr Leu Ile Tyr Cys Asp Glu Ala Leu His Arg Pro Met Tyr Val Phe
50                      55                      60

```

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Leu Ala Leu Leu Ser Phe Thr Asp Val Leu Met Cys Thr Ser Thr Leu
65                      70                      75                      80

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Pro Asn Thr Leu Phe Ile Leu Trp Phe Asn Leu Lys Glu Ile Asp Phe  
85 90 95

Lys Ala Cys Leu Ala Gln Met Phe Phe Val His Thr Phe Thr Gly Met  
100 105 110

Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp His Cys Val Ala Ile  
115 120 125

Cys Phe Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asn Ser Val Ile Ala  
130 135 140

Lys Ala Gly Phe Leu Thr Phe Leu Arg Gly Val Met Leu Val Ile Pro  
145 150 155 160

Ser Thr Phe Leu Thr Lys Arg Leu Pro Tyr Cys Lys Gly Asn Val Ile  
165 170 175

Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Ile Ser Cys Gly  
180 185 190

Asn Val Arg Val Asn Ala Ile Tyr Gly Leu Ile Val Ala Leu Leu Ile  
195 200 205

Gly Gly Phe Asp Ile Leu Cys Ile Thr Ile Ser Tyr Thr Met Ile Leu  
210 215 220

Gln Ala Val Val Ser Leu Ser Ser Ala Asp Ala Arg Gln Lys Ala Phe  
225 230 235 240

Ser Thr Cys Thr Ala His Phe Cys Ala Ile Val Leu Thr Tyr Val Pro  
245 250 255

Ala Phe Phe Thr Phe Phe Thr His His Phe Gly Gly His Thr Ile Pro  
260 265 270

Leu His Ile His Ile Ile Met Ala Asn Leu Tyr Leu Leu Met Pro Pro  
275 280 285

Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Arg Gln Val Arg Glu  
290 295 300

Ser Val Ile Arg Phe Phe Leu Lys Gly Lys Asp Asn Ser His Asn Phe  
305 310 315 320

<210> 389  
 <211> 948  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (945)  
 <223>

<400> 389  
 atg aca aca cac cga aat gac acc ctc tcc act gaa gct tca gac ttc 48  
 Met Thr Thr His Arg Asn Asp Thr Leu Ser Thr Glu Ala Ser Asp Phe  
 1 5 10 15  
 ctc ttg aat tgt ttt gtc aga tcc ccc agc tgg cag cac tgg ctg tcc 96  
 Leu Leu Asn Cys Phe Val Arg Ser Pro Ser Trp Gln His Trp Leu Ser  
 20 25 30  
 ctg ccc ctc agc ctc ctt ttc ctc ttg gcc gta ggg gcc aac acc acc 144  
 Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Val Gly Ala Asn Thr Thr  
 35 40 45  
 ctc ctg atg acc atc tgg ctg gag gcc tct ctg cac cag ccc ctg tac 192  
 Leu Leu Met Thr Ile Trp Leu Glu Ala Ser Leu His Gln Pro Leu Tyr  
 50 55 60  
 tac ctg ctc agc ctc ctc tcc ctg ctg gac atc gtg ctc tgc ctc act 240  
 Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu Cys Leu Thr  
 65 70 75 80  
 gtc atc ccc aag gtc ctg acc atc ttc tgg ttt gac ctc agg ccc atc 288  
 Val Ile Pro Lys Val Leu Thr Ile Phe Trp Phe Asp Leu Arg Pro Ile  
 85 90 95  
 agc ttc cct gcc tgc ttc ctc cag atg tac atc atg aat tgt ttc cta 336  
 Ser Phe Pro Ala Cys Phe Leu Gln Met Tyr Ile Met Asn Cys Phe Leu  
 100 105 110  
 gcc atg gag tct tgc aca ttc atg gtc atg gcc tat gat cgt tat gta 384  
 Ala Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp Arg Tyr Val  
 115 120 125  
 gcc atc tgc cac cca ctg aga tat cca tca atc atc act gat cac ttt 432  
 Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr Asp His Phe  
 130 135 140  
 gta gtc aag gct gcc atg ttt att ttg acc aga aat gtg ctt atg act 480  
 Val Val Lys Ala Ala Met Phe Ile Leu Thr Arg Asn Val Leu Met Thr  
 145 150 155 160  
 ctg ccc atc ccc atc ctt tca gca caa ctc cgt tat tgt gga aga aat 528  
 Leu Pro Ile Pro Ile Leu Ser Ala Gln Leu Arg Tyr Cys Gly Arg Asn  
 165 170 175  
 gtc att gag aac tgc atc tgt gcc aat atg tct gtt tcc aga ctc tcc 576  
 Val Ile Glu Asn Cys Ile Cys Ala Asn Met Ser Val Ser Arg Leu Ser  
 180 185 190  
 tgc gat gat gtc acc atc aat cac ctt tac caa ttt gct gga ggc tgg 624

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Cys Asp Asp Val Thr Ile Asn His Leu Tyr Gln Phe Ala Gly Gly Trp  
 195 200 205  
 act ctg cta gga tct gac ctc atc ctt atc ttc ctc tcc tac acc ttc 672  
 Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Phe Leu Ser Tyr Thr Phe  
 210 215 220  
 att ctg cga gct gtg ctg aga ctc aag gca gag ggt gcc gtg gca aag 720  
 Ile Leu Arg Ala Val Leu Arg Leu Lys Ala Glu Gly Ala Val Ala Lys  
 225 230 235 240  
 gcc cta agc aca tgt ggc tcc cac ttc atg ctc atc ctc ttc ttc agc 768  
 Ala Leu Ser Thr Cys Gly Ser His Phe Met Leu Ile Leu Phe Phe Ser  
 245 250 255  
 acc atc ctt ctg gtt ttt gtc ctc aca cat gtg gct aag aag aaa gtc 816  
 Thr Ile Leu Leu Val Phe Val Leu Thr His Val Ala Lys Lys Lys Val  
 260 265 270  
 tcc cct gat gtg cca gtc ttg ctc aat gtt ctc cac cat gtc att cct 864  
 Ser Pro Asp Val Pro Val Leu Leu Asn Val Leu His His Val Ile Pro  
 275 280 285  
 gca gcc ctt aac ccc atc att tac ggg gtg aga acc caa gaa att aag 912  
 Ala Ala Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Gln Glu Ile Lys  
 290 295 300  
 cag gga atg cag agg ttg ttg aag aaa ggg tgc taa 948  
 Gln Gly Met Gln Arg Leu Leu Lys Lys Gly Cys  
 305 310 315

<210> 390  
 <211> 315  
 <212> PRT  
 <213> Homo Sapiens

<400> 390

Met Thr Thr His Arg Asn Asp Thr Leu Ser Thr Glu Ala Ser Asp Phe  
 1 5 10 15

Leu Leu Asn Cys Phe Val Arg Ser Pro Ser Trp Gln His Trp Leu Ser  
 20 25 30

Leu Pro Leu Ser Leu Leu Phe Leu Leu Ala Val Gly Ala Asn Thr Thr  
 35 40 45

Leu Leu Met Thr Ile Trp Leu Glu Ala Ser Leu His Gln Pro Leu Tyr  
 50 55 60

Tyr Leu Leu Ser Leu Leu Ser Leu Leu Asp Ile Val Leu Cys Leu Thr  
 65 70 75 80

Val Ile Pro Lys Val Leu Thr Ile Phe Trp Phe Asp Leu Arg Pro Ile  
 85 90 95

Ser Phe Pro Ala Cys Phe Leu Gln Met Tyr Ile Met Asn Cys Phe Leu  
 100 105 110

Ala Met Glu Ser Cys Thr Phe Met Val Met Ala Tyr Asp Arg Tyr Val  
 115 120 125

Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile Ile Thr Asp His Phe  
 130 135 140

Val Val Lys Ala Ala Met Phe Ile Leu Thr Arg Asn Val Leu Met Thr  
 145 150 155 160

Leu Pro Ile Pro Ile Leu Ser Ala Gln Leu Arg Tyr Cys Gly Arg Asn  
 165 170 175

Val Ile Glu Asn Cys Ile Cys Ala Asn Met Ser Val Ser Arg Leu Ser  
 180 185 190

Cys Asp Asp Val Thr Ile Asn His Leu Tyr Gln Phe Ala Gly Gly Trp  
 195 200 205

Thr Leu Leu Gly Ser Asp Leu Ile Leu Ile Phe Leu Ser Tyr Thr Phe  
 210 215 220

Ile Leu Arg Ala Val Leu Arg Leu Lys Ala Glu Gly Ala Val Ala Lys  
 225 230 235 240

Ala Leu Ser Thr Cys Gly Ser His Phe Met Leu Ile Leu Phe Phe Ser  
 245 250 255

Thr Ile Leu Leu Val Phe Val Leu Thr His Val Ala Lys Lys Lys Val  
 260 265 270

Ser Pro Asp Val Pro Val Leu Leu Asn Val Leu His His Val Ile Pro  
 275 280 285

Ala Ala Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Gln Glu Ile Lys  
 290 295 300

Gln Gly Met Gln Arg Leu Leu Lys Lys Gly Cys  
 305 310 315

<210> 391

<211> 942

<212> DNA

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&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(939)

&lt;223&gt;

<400> 391  
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 Met Pro Ile Ala Asn Asp Thr Gln Phe His Thr Ser Ser Phe Leu Leu  
 1 5 10 15  
 ctg ggt atc cca ggg cta gaa gat gtg cac atc tgg att gga ttc cct 96  
 Leu Gly Ile Pro Gly Leu Glu Asp Val His Ile Trp Ile Gly Phe Pro  
 20 25 30  
 ttt ttc tct gtg tat ctt att gca ctc ctg gga aat gct gct atc ttc 144  
 Phe Phe Ser Val Tyr Leu Ile Ala Leu Leu Gly Asn Ala Ala Ile Phe  
 35 40 45  
 ttt gtg atc caa act gag cag agt ctc cat gag ccc atg tac tac tgc 192  
 Phe Val Ile Gln Thr Glu Gln Ser Leu His Glu Pro Met Tyr Tyr Cys  
 50 55 60  
 ctg gcc atg ttg gat tcc att gac ctg agc ttg tct acg gcc acc att 240  
 Leu Ala Met Leu Asp Ser Ile Asp Leu Ser Leu Ser Thr Ala Thr Ile  
 65 70 75 80  
 ccc aaa atg ctg ggc atc ttc tgg ttc aat atc aag gaa ata tct ttt 288  
 Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Ile Lys Glu Ile Ser Phe  
 85 90 95  
 gga ggc tac ctt tct cag atg ttc ttc atc cat ttc ttc act gtc atg 336  
 Gly Gly Tyr Leu Ser Gln Met Phe Phe Ile His Phe Phe Thr Val Met  
 100 105 110  
 gag agc atc gta ttg gtg gcc atg gcc ttt gac cgc tac att gcc att 384  
 Glu Ser Ile Val Leu Val Ala Met Ala Phe Asp Arg Tyr Ile Ala Ile  
 115 120 125  
 tgc aaa cct ctt tgg tac acc atg atc ctc acc agc aaa atc atc agc 432  
 Cys Lys Pro Leu Trp Tyr Thr Met Ile Leu Thr Ser Lys Ile Ile Ser  
 130 135 140  
 ctc att gca ggc att gct gtc ctg agg agc ttg tac atg gtc att cca 480  
 Leu Ile Ala Gly Ile Ala Val Leu Arg Ser Leu Tyr Met Val Ile Pro  
 145 150 155 160  
 ctg gtg ttt ctc ctc tta agg ttg ccc ttc tgt gga cat cgt atc atc 528  
 Leu Val Phe Leu Leu Leu Arg Leu Pro Phe Cys Gly His Arg Ile Ile  
 165 170 175  
 cct cat act tac tgt gag cac atg ggc att gcc cgt ctg gcc tgt gcc 576  
 Pro His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys Ala  
 180 185 190  
 agc atc aaa gtc aac att atg ttt ggt ctt ggc agt att tct ctc ttg 624  
 Ser Ile Lys Val Asn Ile Met Phe Gly Leu Gly Ser Ile Ser Leu Leu  
 195 200 205

tta ttg gat gtg ctc ctt att att ctc tcc cat atc agg atc ctc tat 672  
 Leu Leu Asp Val Leu Leu Ile Ile Leu Ser His Ile Arg Ile Leu Tyr  
 210 215 220  
 gct gtc ttc tgc ctg ccc tcc tgg gaa gct cga ctc aaa gct ctc aac 720  
 Ala Val Phe Cys Leu Pro Ser Trp Glu Ala Arg Leu Lys Ala Leu Asn  
 225 230 235 240  
 acc tgt ggc tct cac att ggt gtt atc tta gcc ttt tct aca cca gca 768  
 Thr Cys Gly Ser His Ile Gly Val Ile Leu Ala Phe Ser Thr Pro Ala  
 245 250 255  
 ttt ttc tct ttc ttt aca cac tgc ttt ggc cat gat att ccc caa tat 816  
 Phe Phe Ser Phe Phe Thr His Cys Phe Gly His Asp Ile Pro Gln Tyr  
 260 265 270  
 atc cac att ttc ttg gct aat cta tat gtg gtt gtt cct ccc acc ctc 864  
 Ile His Ile Phe Leu Ala Asn Leu Tyr Val Val Val Pro Pro Thr Leu  
 275 280 285  
 aat cct gta atc tat ggg gtc aga acc aaa cat att agg gag aca gtg 912  
 Asn Pro Val Ile Tyr Gly Val Arg Thr Lys His Ile Arg Glu Thr Val  
 290 295 300  
 ctg agg att ttc ttc aag aca gat cac taa 942  
 Leu Arg Ile Phe Phe Lys Thr Asp His  
 305 310

<210> 392  
 <211> 313  
 <212> PRT  
 <213> Homo Sapiens

<400> 392

Met Pro Ile Ala Asn Asp Thr Gln Phe His Thr Ser Ser Phe Leu Leu  
1 5 10 15

Leu Gly Ile Pro Gly Leu Glu Asp Val His Ile Trp Ile Gly Phe Pro  
20 25 30

Phe Phe Ser Val Tyr Leu Ile Ala Leu Leu Gly Asn Ala Ala Ile Phe  
35 40 45

Phe Val Ile Gln Thr Glu Gln Ser Leu His Glu Pro Met Tyr Tyr Cys  
50 55 60

Leu Ala Met Leu Asp Ser Ile Asp Leu Ser Leu Ser Thr Ala Thr Ile  
65 70 75 80

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Ile Lys Glu Ile Ser Phe  
85 90 95

Gly Gly Tyr Leu Ser Gln Met Phe Phe Ile His Phe Phe Thr Val Met

100 105 110  
 Glu Ser Ile Val Leu Val Ala Met Ala Phe Asp Arg Tyr Ile Ala Ile  
 115 120 125  
 Cys Lys Pro Leu Trp Tyr Thr Met Ile Leu Thr Ser Lys Ile Ile Ser  
 130 135 140  
 Leu Ile Ala Gly Ile Ala Val Leu Arg Ser Leu Tyr Met Val Ile Pro  
 145 150 155 160  
 Leu Val Phe Leu Leu Leu Arg Leu Pro Phe Cys Gly His Arg Ile Ile  
 165 170 175  
 Pro His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys Ala  
 180 185 190  
 Ser Ile Lys Val Asn Ile Met Phe Gly Leu Gly Ser Ile Ser Leu Leu  
 195 200 205  
 Leu Leu Asp Val Leu Leu Ile Ile Leu Ser His Ile Arg Ile Leu Tyr  
 210 215 220  
 Ala Val Phe Cys Leu Pro Ser Trp Glu Ala Arg Leu Lys Ala Leu Asn  
 225 230 235 240  
 Thr Cys Gly Ser His Ile Gly Val Ile Leu Ala Phe Ser Thr Pro Ala  
 245 250 255  
 Phe Phe Ser Phe Phe Thr His Cys Phe Gly His Asp Ile Pro Gln Tyr  
 260 265 270  
 Ile His Ile Phe Leu Ala Asn Leu Tyr Val Val Val Pro Pro Thr Leu  
 275 280 285  
 Asn Pro Val Ile Tyr Gly Val Arg Thr Lys His Ile Arg Glu Thr Val  
 290 295 300  
 Leu Arg Ile Phe Phe Lys Thr Asp His  
 305 310

<210> 393  
 <211> 939  
 <212> DNA  
 <213> Homo Sapiens

<220>



&lt;221&gt; CDS

&lt;222&gt; (1) .. (936)

&lt;223&gt;

&lt;400&gt; 393

atg cct tct atc aat gac acc cac ttc tat ccc ccc ttc ttc ctc ctg	48
Met Pro Ser Ile Asn Asp Thr His Phe Tyr Pro Pro Phe Phe Leu Leu	
1 5 10 15	
cta gga ata cca gga ctg gac act tta cat atc tgg att tct ttc cca	96
Leu Gly Ile Pro Gly Leu Asp Thr Leu His Ile Trp Ile Ser Phe Pro	
20 25 30	
ttc tgt att gtg tac ctg att gcc att gtg ggg aat atg acc att ctc	144
Phe Cys Ile Val Tyr Leu Ile Ala Ile Val Gly Asn Met Thr Ile Leu	
35 40 45	
ttt gtg atc aaa act gaa cat agt cta cac cag ccc atg ttc tac ttc	192
Phe Val Ile Lys Thr Glu His Ser Leu His Gln Pro Met Phe Tyr Phe	
50 55 60	
ctg gcc atg ttg tct atg att gat ctg ggt ctg tcc aca tcc act atc	240
Leu Ala Met Leu Ser Met Ile Asp Leu Gly Leu Ser Thr Ser Thr Ile	
65 70 75 80	
ccc aaa atg cta gga atc ttc tgg ttc aac ctc caa gag atc agc ttt	288
Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gln Glu Ile Ser Phe	
85 90 95	
ggg gga tgc ctt ctt cag atg ttc ttt att cac atg ttt aca ggc atg	336
Gly Gly Cys Leu Leu Gln Met Phe Phe Ile His Met Phe Thr Gly Met	
100 105 110	
gag act gtt ctg ttg gtg gtc atg gct tat gac cgc ttt gtt gcc atc	384
Glu Thr Val Leu Leu Val Val Met Ala Tyr Asp Arg Phe Val Ala Ile	
115 120 125	
tgc aac cct ctc cag tac acc atg atc ctc acc aat aaa acc atc agt	432
Cys Asn Pro Leu Gln Tyr Thr Met Ile Leu Thr Asn Lys Thr Ile Ser	
130 135 140	
atc cta gct tct gtg gtt gtt gga aga aat tta gtt ctt gta acc cca	480
Ile Leu Ala Ser Val Val Val Gly Arg Asn Leu Val Leu Val Thr Pro	
145 150 155 160	
ttt gtg ttt ctc att ctg cgt ctg cca ttc tgt ggg cat aac atc gta	528
Phe Val Phe Leu Ile Leu Arg Leu Pro Phe Cys Gly His Asn Ile Val	
165 170 175	
cct cac aca tac tgt gag cac agg ggt ctg gcc ggg ttg gcc tgt gca	576
Pro His Thr Tyr Cys Glu His Arg Gly Leu Ala Gly Leu Ala Cys Ala	
180 185 190	
ccc att aag atc aac ata atc tat ggg ctc atg gtg att tct tat att	624
Pro Ile Lys Ile Asn Ile Ile Tyr Gly Leu Met Val Ile Ser Tyr Ile	
195 200 205	
att gtg gat gtg atc tta att gcc tct tcc tat gtg ctt atc ctt aga	672
Ile Val Asp Val Ile Leu Ile Ala Ser Ser Tyr Val Leu Ile Leu Arg	
210 215 220	

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gct gtt ttt cgc ctt ccc tct caa gat gtc cga cta aag gcc ttc aat 720  
 Ala Val Phe Arg Leu Pro Ser Gln Asp Val Arg Leu Lys Ala Phe Asn 240  
 225 230 235

acc tgt ggt tct cat gtc tgt gtt atg ctg tgc ttt tac aca cca gca 768  
 Thr Cys Gly Ser His Val Cys Val Met Leu Cys Phe Tyr Thr Pro Ala 255  
 245 250

ttt ttt tct ttt atg aca cat cgt ttt ggc caa aac att ccc cac tat 816  
 Phe Phe Ser Phe Met Thr His Arg Phe Gly Gln Asn Ile Pro His Tyr 270  
 260 265

atc cat att ctt ttg gct aac ctg tat gtg gtt gtc cca cct gcc ctt 864  
 Ile His Ile Leu Leu Ala Asn Leu Tyr Val Val Val Pro Pro Ala Leu 285  
 275 280

aac cct gtc att tat gga gtc agg acc aag cag atc cga gag caa att 912  
 Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Glu Gln Ile 300  
 290 295

gtg aaa ata ttt gta cag aaa gaa taa 939  
 Val Lys Ile Phe Val Gln Lys Glu 310  
 305

<210> 394  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 394

Met Pro Ser Ile Asn Asp Thr His Phe Tyr Pro Pro Phe Phe Leu Leu 15  
 1 5 10

Leu Gly Ile Pro Gly Leu Asp Thr Leu His Ile Trp Ile Ser Phe Pro 30  
 20 25

Phe Cys Ile Val Tyr Leu Ile Ala Ile Val Gly Asn Met Thr Ile Leu 45  
 35 40

Phe Val Ile Lys Thr Glu His Ser Leu His Gln Pro Met Phe Tyr Phe 60  
 50 55

Leu Ala Met Leu Ser Met Ile Asp Leu Gly Leu Ser Thr Ser Thr Ile 80  
 65 70 75

Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Leu Gln Glu Ile Ser Phe 95  
 85 90

Gly Gly Cys Leu Leu Gln Met Phe Phe Ile His Met Phe Thr Gly Met 110  
 100 105

Glu Thr Val Leu Leu Val Val Met Ala Tyr Asp Arg Phe Val Ala Ile  
 115 120 125

Cys Asn Pro Leu Gln Tyr Thr Met Ile Leu Thr Asn Lys Thr Ile Ser  
 130 135 140

Ile Leu Ala Ser Val Val Val Gly Arg Asn Leu Val Leu Val Thr Pro  
 145 150 155 160

Phe Val Phe Leu Ile Leu Arg Leu Pro Phe Cys Gly His Asn Ile Val  
 165 170 175

Pro His Thr Tyr Cys Glu His Arg Gly Leu Ala Gly Leu Ala Cys Ala  
 180 185 190

Pro Ile Lys Ile Asn Ile Ile Tyr Gly Leu Met Val Ile Ser Tyr Ile  
 195 200 205

Ile Val Asp Val Ile Leu Ile Ala Ser Ser Tyr Val Leu Ile Leu Arg  
 210 215 220

Ala Val Phe Arg Leu Pro Ser Gln Asp Val Arg Leu Lys Ala Phe Asn  
 225 230 235 240

Thr Cys Gly Ser His Val Cys Val Met Leu Cys Phe Tyr Thr Pro Ala  
 245 250 255

Phe Phe Ser Phe Met Thr His Arg Phe Gly Gln Asn Ile Pro His Tyr  
 260 265 270

Ile His Ile Leu Leu Ala Asn Leu Tyr Val Val Val Pro Pro Ala Leu  
 275 280 285

Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Glu Gln Ile  
 290 295 300

Val Lys Ile Phe Val Gln Lys Glu  
 305 310

<210> 395  
 <211> 954  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(951)  
 <223>

<400> 395  
 atg gca gga aga atg tct acg tct aat cac acc cag ttc cat cct tct 48  
 Met Ala Gly Arg Met Ser Thr Ser Asn His Thr Gln Phe His Pro Ser  
 1 5 10 15  
 tca ttc cta ctg ctg ggt atc cca ggg cta gaa gat gtg cac att tgg 96  
 Ser Phe Leu Leu Leu Gly Ile Pro Gly Leu Glu Asp Val His Ile Trp  
 20 25 30  
 att gga gtc cct ttt ttc ttt gtg tat ctt gtt gca ctc ctg gga aac 144  
 Ile Gly Val Pro Phe Phe Phe Val Tyr Leu Val Ala Leu Leu Gly Asn  
 35 40 45  
 act gct ctc ttg ttt gtg atc cag act gag cag agt ctc cat gag cct 192  
 Thr Ala Leu Leu Phe Val Ile Gln Thr Glu Gln Ser Leu His Glu Pro  
 50 55 60  
 atg tac tac ttc ctg gcc atg ttg gat tcc att gac ctg ggc ttg tct 240  
 Met Tyr Tyr Phe Leu Ala Met Leu Asp Ser Ile Asp Leu Gly Leu Ser  
 65 70 75 80  
 aca gcc acc atc ccc aaa atg ttg ggc atc ttc tgg ttc aat acc aaa 288  
 Thr Ala Thr Ile Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Thr Lys  
 85 90 95  
 gaa ata tct ttt gga ggc tgc ctt tct cac atg ttc ttc atc cat ttc 336  
 Glu Ile Ser Phe Gly Gly Cys Leu Ser His Met Phe Phe Ile His Phe  
 100 105 110  
 ttc act gct atg gag agc att gtg ttg gtg gcc atg gcc ttt gac cgc 384  
 Phe Thr Ala Met Glu Ser Ile Val Leu Val Ala Met Ala Phe Asp Arg  
 115 120 125  
 tac att gcc att tgc aaa cct ctt cgg tac acc atg atc ctc acc agc 432  
 Tyr Ile Ala Ile Cys Lys Pro Leu Arg Tyr Thr Met Ile Leu Thr Ser  
 130 135 140  
 aaa atc atc agc ctc att gca ggc att gct gtc ctg agg agc ctg tac 480  
 Lys Ile Ile Ser Leu Ile Ala Gly Ile Ala Val Leu Arg Ser Leu Tyr  
 145 150 155 160  
 atg gtt gtt cca ctg gtg ttt ctc ctt ctg agg ctg ccc ttc tgt ggg 528  
 Met Val Val Pro Leu Val Phe Leu Leu Leu Arg Leu Pro Phe Cys Gly  
 165 170 175  
 cat cgt atc atc cct cat act tat tgt gag cac atg ggc att gcc cgt 576  
 His Arg Ile Ile Pro His Thr Tyr Cys Glu His Met Gly Ile Ala Arg  
 180 185 190  
 ctg gcc tgt gcc agc atc aaa gtc aac att agg ttt ggc ctt ggc aac 624  
 Leu Ala Cys Ala Ser Ile Lys Val Asn Ile Arg Phe Gly Leu Gly Asn  
 195 200 205  
 ata tct ctc ttg tta ctg gat gtt atc ctt att att ctc tcc tat gtc 672  
 Ile Ser Leu Leu Leu Leu Asp Val Ile Leu Ile Ile Leu Ser Tyr Val  
 210 215 220  
 agg atc ctg tat gct gtc ttc tgc ctg ccc tcc tgg gaa gct cga ctc 720  
 Arg Ile Leu Tyr Ala Val Phe Cys Leu Pro Ser Trp Glu Ala Arg Leu

225                      230                      235                      240  
 aaa gct ctc aac acc tgt ggt tct cat att ggt gtt atc tta gcc ttt                      768  
 Lys Ala Leu Asn Thr Cys Gly Ser His Ile Gly Val Ile Leu Ala Phe  
                                  245                                   250                                   255  
  
 ttt aca cca gca ttt ttt tca ttc ttg aca cat cgt ttt ggc cat aat                      816  
 Phe Thr Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His Asn  
                                  260                                   265                                   270  
  
 atc cca cag tat ata cat att ata tta gcc aac ctg tat gtg gtt gtc                      864  
 Ile Pro Gln Tyr Ile His Ile Ile Leu Ala Asn Leu Tyr Val Val Val  
                                  275                                   280                                   285  
  
 cca cca gcc ctc aat cct gta atc tat gga gtc agg aca aag cag att                      912  
 Pro Pro Ala Leu Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile  
                                  290                                   295                                   300  
  
 cga gag aga gtg ctg agg att ttt ctc aag acc aat cac taa                      954  
 Arg Glu Arg Val Leu Arg Ile Phe Leu Lys Thr Asn His  
                                  305                                   310                                   315  
  
 <210> 396  
 <211> 317  
 <212> PRT  
 <213> Homo Sapiens  
  
 <400> 396  
  
 Met Ala Gly Arg Met Ser Thr Ser Asn His Thr Gln Phe His Pro Ser  
 1                                   5                                   10                                   15  
  
 Ser Phe Leu Leu Leu Gly Ile Pro Gly Leu Glu Asp Val His Ile Trp  
                                  20                                   25                                   30  
  
 Ile Gly Val Pro Phe Phe Phe Val Tyr Leu Val Ala Leu Leu Gly Asn  
                                  35                                   40                                   45  
  
 Thr Ala Leu Leu Phe Val Ile Gln Thr Glu Gln Ser Leu His Glu Pro  
                                  50                                   55                                   60  
  
 Met Tyr Tyr Phe Leu Ala Met Leu Asp Ser Ile Asp Leu Gly Leu Ser  
 65                                   70                                   75                                   80  
  
 Thr Ala Thr Ile Pro Lys Met Leu Gly Ile Phe Trp Phe Asn Thr Lys  
                                  85                                   90                                   95  
  
 Glu Ile Ser Phe Gly Gly Cys Leu Ser His Met Phe Phe Ile His Phe  
                                  100                                   105                                   110  
  
 Phe Thr Ala Met Glu Ser Ile Val Leu Val Ala Met Ala Phe Asp Arg  
                                  115                                   120                                   125

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Tyr Ile Ala Ile Cys Lys Pro Leu Arg Tyr Thr Met Ile Leu Thr Ser  
 130 135 140

Lys Ile Ile Ser Leu Ile Ala Gly Ile Ala Val Leu Arg Ser Leu Tyr  
 145 150 155 160

Met Val Val Pro Leu Val Phe Leu Leu Leu Arg Leu Pro Phe Cys Gly  
 165 170 175

His Arg Ile Ile Pro His Thr Tyr Cys Glu His Met Gly Ile Ala Arg  
 180 185 190

Leu Ala Cys Ala Ser Ile Lys Val Asn Ile Arg Phe Gly Leu Gly Asn  
 195 200 205

Ile Ser Leu Leu Leu Leu Asp Val Ile Leu Ile Ile Leu Ser Tyr Val  
 210 215 220

Arg Ile Leu Tyr Ala Val Phe Cys Leu Pro Ser Trp Glu Ala Arg Leu  
 225 230 235 240

Lys Ala Leu Asn Thr Cys Gly Ser His Ile Gly Val Ile Leu Ala Phe  
 245 250 255

Phe Thr Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His Asn  
 260 265 270

Ile Pro Gln Tyr Ile His Ile Ile Leu Ala Asn Leu Tyr Val Val Val  
 275 280 285

Pro Pro Ala Leu Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile  
 290 295 300

Arg Glu Arg Val Leu Arg Ile Phe Leu Lys Thr Asn His  
 305 310 315

<210> 397  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (972)  
 <223>

<400> 397

atg cct cta ttt aat tca tta tgc tgg ttt cca aca att cat gtg act	48
Met Pro Leu Phe Asn Ser Leu Cys Trp Phe Pro Thr Ile His Val Thr	
1 5 10 15	
cct cca tct ttt att ctt aat gga ata cct ggt ctg gaa aga gta cat	96
Pro Pro Ser Phe Ile Leu Asn Gly Ile Pro Gly Leu Glu Arg Val His	
20 25 30	
gta tgg atc tcc ctc cca ctc tgc aca atg tac atc atc ttc ctt gtg	144
Val Trp Ile Ser Leu Pro Leu Cys Thr Met Tyr Ile Ile Phe Leu Val	
35 40 45	
ggg aat ctt ggt ctt gtg tac ctc att tat tat gag gag tcc tta cat	192
Gly Asn Leu Gly Leu Val Tyr Leu Ile Tyr Tyr Glu Glu Ser Leu His	
50 55 60	
cat ccg atg tat ttt ttt ttt ggc cat gct ctc tcc ctc att gac ctc	240
His Pro Met Tyr Phe Phe Phe Gly His Ala Leu Ser Leu Ile Asp Leu	
65 70 75 80	
ctt acc tgc acc acc act cta ccc aat gca ctc tgc atc ttc tgg ttc	288
Leu Thr Cys Thr Thr Thr Leu Pro Asn Ala Leu Cys Ile Phe Trp Phe	
85 90 95	
agt ctc aaa gaa att aac ttc aat gct tgc ttg gcc cag atg ttc ttt	336
Ser Leu Lys Glu Ile Asn Phe Asn Ala Cys Leu Ala Gln Met Phe Phe	
100 105 110	
gtt cat ggg ttc aca ggt gtg gag tct ggg gtg ctc atg ctc atg gct	384
Val His Gly Phe Thr Gly Val Glu Ser Gly Val Leu Met Leu Met Ala	
115 120 125	
cta gac cgc tat gta gcc att tgc tac cct ttg cgt tat gct acc aca	432
Leu Asp Arg Tyr Val Ala Ile Cys Tyr Pro Leu Arg Tyr Ala Thr Thr	
130 135 140	
ctc acc aac cct atc att gcc aag gct gag ctt gcc acc ttc ctg agg	480
Leu Thr Asn Pro Ile Ile Ala Lys Ala Glu Leu Ala Thr Phe Leu Arg	
145 150 155 160	
ggt gta ttg ctg atg att cct ttc cca ttc ttg gtt aag cgt ttg cct	528
Gly Val Leu Leu Met Ile Pro Phe Pro Phe Leu Val Lys Arg Leu Pro	
165 170 175	
ttc tgc caa agc aat att atc tcc cat acg tac tgc gac cac atg tct	576
Phe Cys Gln Ser Asn Ile Ile Ser His Thr Tyr Cys Asp His Met Ser	
180 185 190	
gta gta aag cta tct tgt gcc agc atc aag gtc aat gta atc tat ggt	624
Val Val Lys Leu Ser Cys Ala Ser Ile Lys Val Asn Val Ile Tyr Gly	
195 200 205	
cta atg gtt gct ctc ctg att gga gtg ttt gac att tgt tgt ata tct	672
Leu Met Val Ala Leu Leu Ile Gly Val Phe Asp Ile Cys Cys Ile Ser	
210 215 220	
ttg tct tac act ttg atc ctc aag gca gcg atc agc ctc tct tca tca	720
Leu Ser Tyr Thr Leu Ile Leu Lys Ala Ala Ile Ser Leu Ser Ser Ser	
225 230 235 240	
gat gct cgg cag aag gct ttc agc acc tgc act gcc cat ata tct gcc	768

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Asp Ala Arg Gln Lys Ala Phe Ser Thr Cys Thr Ala His Ile Ser Ala  
 245 250 255  
 atc atc atc acc tat gtt cca gca ttc ttc act ttc ttt gcc cac cgt 816  
 Ile Ile Ile Thr Tyr Val Pro Ala Phe Phe Thr Phe Phe Ala His Arg  
 260 265 270  
 ttt ggg gga cac aca att ccc cct tct ctt cac atc att gtg gct aat 864  
 Phe Gly Gly His Thr Ile Pro Pro Ser Leu His Ile Ile Val Ala Asn  
 275 280 285  
 ctt tat ctt ctt ctt ccc cca act cta aac cct att gtt tat gga gta 912  
 Leu Tyr Leu Leu Leu Pro Pro Thr Leu Asn Pro Ile Val Tyr Gly Val  
 290 295 300  
 aag aca aaa cag ata cgc aag agt gtc ata aag ttc ttc cag ggt gat 960  
 Lys Thr Lys Gln Ile Arg Lys Ser Val Ile Lys Phe Phe Gln Gly Asp  
 305 310 315 320  
 aag ggt gca ggt tga 975  
 Lys Gly Ala Gly

<210> 398  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 398

Met Pro Leu Phe Asn Ser Leu Cys Trp Phe Pro Thr Ile His Val Thr  
 1 5 10 15  
 Pro Pro Ser Phe Ile Leu Asn Gly Ile Pro Gly Leu Glu Arg Val His  
 20 25 30  
 Val Trp Ile Ser Leu Pro Leu Cys Thr Met Tyr Ile Ile Phe Leu Val  
 35 40 45  
 Gly Asn Leu Gly Leu Val Tyr Leu Ile Tyr Tyr Glu Glu Ser Leu His  
 50 55 60  
 His Pro Met Tyr Phe Phe Phe Gly His Ala Leu Ser Leu Ile Asp Leu  
 65 70 75 80  
 Leu Thr Cys Thr Thr Thr Leu Pro Asn Ala Leu Cys Ile Phe Trp Phe  
 85 90 95  
 Ser Leu Lys Glu Ile Asn Phe Asn Ala Cys Leu Ala Gln Met Phe Phe  
 100 105 110  
 Val His Gly Phe Thr Gly Val Glu Ser Gly Val Leu Met Leu Met Ala  
 115 120 125



Leu Asp Arg Tyr Val Ala Ile Cys Tyr Pro Leu Arg Tyr Ala Thr Thr  
 130 135 140

Leu Thr Asn Pro Ile Ile Ala Lys Ala Glu Leu Ala Thr Phe Leu Arg  
 145 150 155 160

Gly Val Leu Leu Met Ile Pro Phe Pro Phe Leu Val Lys Arg Leu Pro  
 165 170 175

Phe Cys Gln Ser Asn Ile Ile Ser His Thr Tyr Cys Asp His Met Ser  
 180 185 190

Val Val Lys Leu Ser Cys Ala Ser Ile Lys Val Asn Val Ile Tyr Gly  
 195 200 205

Leu Met Val Ala Leu Leu Ile Gly Val Phe Asp Ile Cys Cys Ile Ser  
 210 215 220

Leu Ser Tyr Thr Leu Ile Leu Lys Ala Ala Ile Ser Leu Ser Ser Ser  
 225 230 235 240

Asp Ala Arg Gln Lys Ala Phe Ser Thr Cys Thr Ala His Ile Ser Ala  
 245 250 255

Ile Ile Ile Thr Tyr Val Pro Ala Phe Phe Thr Phe Phe Ala His Arg  
 260 265 270

Phe Gly Gly His Thr Ile Pro Pro Ser Leu His Ile Ile Val Ala Asn  
 275 280 285

Leu Tyr Leu Leu Leu Pro Pro Thr Leu Asn Pro Ile Val Tyr Gly Val  
 290 295 300

Lys Thr Lys Gln Ile Arg Lys Ser Val Ile Lys Phe Phe Gln Gly Asp  
 305 310 315 320

Lys Gly Ala Gly

<210> 399

<211> 972

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

&lt;222&gt; (1) .. (969)

&lt;223&gt;

<400> 399  
 atg agt cac acc aat gtt acc atc ttc cat cct gca gtt ttt gtc ctt 48  
 Met Ser His Thr Asn Val Thr Ile Phe His Pro Ala Val Phe Val Leu  
 1 5 10 15  
 cct ggc atc cct ggg ttg gag gct tat cac att tgg ctg tca ata cct 96  
 Pro Gly Ile Pro Gly Leu Glu Ala Tyr His Ile Trp Leu Ser Ile Pro  
 20 25 30  
 ctt tgc ctc att tac atc act gca gtc ctg gga aac agc atc ctg ata 144  
 Leu Cys Leu Ile Tyr Ile Thr Ala Val Leu Gly Asn Ser Ile Leu Ile  
 35 40 45  
 gtg gtt att gtc atg gaa cgt aac ctt cat gtg ccc atg tat ttc ttc 192  
 Val Val Ile Val Met Glu Arg Asn Leu His Val Pro Met Tyr Phe Phe  
 50 55 60  
 ctc tca atg ctg gcc gtc atg gac atc ctg ctg tct acc acc act gtg 240  
 Leu Ser Met Leu Ala Val Met Asp Ile Leu Leu Ser Thr Thr Thr Val  
 65 70 75 80  
 ccc aag gcc cta gcc atc ttt tgg ctt caa gca cat aac att gct ttt 288  
 Pro Lys Ala Leu Ala Ile Phe Trp Leu Gln Ala His Asn Ile Ala Phe  
 85 90 95  
 gat gcc tgt gtc acc caa ggc ttc ttt gtc cat atg atg ttt gtg ggg 336  
 Asp Ala Cys Val Thr Gln Gly Phe Phe Val His Met Met Phe Val Gly  
 100 105 110  
 gag tca gct atc ctg tta gcc atg gcc ttt gat cgc ttt gtg gcc att 384  
 Glu Ser Ala Ile Leu Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125  
 tgt gcc cca ctg aga tat aca aca gtg cta aca tgg cct gtt gtg ggg 432  
 Cys Ala Pro Leu Arg Tyr Thr Thr Val Leu Thr Trp Pro Val Val Gly  
 130 135 140  
 agg att gct ctg gcc gtc atc acc cga agc ttc tgc atc atc ttc cca 480  
 Arg Ile Ala Leu Ala Val Ile Thr Arg Ser Phe Cys Ile Ile Phe Pro  
 145 150 155 160  
 gtc ata ttc ttg ctg aag cgg ctg ccc ttc tgc cta acc aac att gtt 528  
 Val Ile Phe Leu Leu Lys Arg Leu Pro Phe Cys Leu Thr Asn Ile Val  
 165 170 175  
 cct cac tcc tac tgt gag cat att gga gtg gct cgt tta gcc tgt gct 576  
 Pro His Ser Tyr Cys Glu His Ile Gly Val Ala Arg Leu Ala Cys Ala  
 180 185 190  
 gac atc act gtt aac att tgg tat ggc ttc tca gtg ccc att gtc atg 624  
 Asp Ile Thr Val Asn Ile Trp Tyr Gly Phe Ser Val Pro Ile Val Met  
 195 200 205  
 gtc atc ttg gat gtt atc ctc atc gct gtg tct tac tca ctg atc ctc 672  
 Val Ile Leu Asp Val Ile Leu Ile Ala Val Ser Tyr Ser Leu Ile Leu  
 210 215 220

cga gca gtg ttt cgt ttg ccc tcc cag gat gct cgg cac aag gcc ctc 720  
 Arg Ala Val Phe Arg Leu Pro Ser Gln Asp Ala Arg His Lys Ala Leu  
 225 230 235 240  
 agc act tgt ggc tcc cac ctc tgt gtc atc ctt atg ttt tat gtt cca 768  
 Ser Thr Cys Gly Ser His Leu Cys Val Ile Leu Met Phe Tyr Val Pro  
 245 250 255  
 tcc ttc ttt acc tta ttg acc cat cat ttt ggg cgt aat att cct caa 816  
 Ser Phe Phe Thr Leu Leu Thr His His Phe Gly Arg Asn Ile Pro Gln  
 260 265 270  
 cat gtc cat atc ttg ctg gcc aat ctt tat gtg gca gtg cca cca atg 864  
 His Val His Ile Leu Leu Ala Asn Leu Tyr Val Ala Val Pro Pro Met  
 275 280 285  
 ctg aac ccc att gtc tat ggt gtg aag act aag cag ata cgt gag ggt 912  
 Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gly  
 290 295 300  
 gta gcc cac cgg ttc ttt gac atc aag act tgg tgc tgt acc tcc cct 960  
 Val Ala His Arg Phe Phe Asp Ile Lys Thr Trp Cys Cys Thr Ser Pro  
 305 310 315 320  
 ctg ggc tca tga 972  
 Leu Gly Ser

<210> 400  
 <211> 323  
 <212> PRT  
 <213> Homo Sapiens  
 <400> 400

Met Ser His Thr Asn Val Thr Ile Phe His Pro Ala Val Phe Val Leu  
 1 5 10 15  
 Pro Gly Ile Pro Gly Leu Glu Ala Tyr His Ile Trp Leu Ser Ile Pro  
 20 25 30  
 Leu Cys Leu Ile Tyr Ile Thr Ala Val Leu Gly Asn Ser Ile Leu Ile  
 35 40 45  
 Val Val Ile Val Met Glu Arg Asn Leu His Val Pro Met Tyr Phe Phe  
 50 55 60  
 Leu Ser Met Leu Ala Val Met Asp Ile Leu Leu Ser Thr Thr Thr Val  
 65 70 75 80  
 Pro Lys Ala Leu Ala Ile Phe Trp Leu Gln Ala His Asn Ile Ala Phe  
 85 90 95  
 Asp Ala Cys Val Thr Gln Gly Phe Phe Val His Met Met Phe Val Gly

100	105	110
Glu Ser Ala Ile Leu Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile 115 120 125		
Cys Ala Pro Leu Arg Tyr Thr Thr Val Leu Thr Trp Pro Val Val Gly 130 135 140		
Arg Ile Ala Leu Ala Val Ile Thr Arg Ser Phe Cys Ile Ile Phe Pro 145 150 155 160		
Val Ile Phe Leu Leu Lys Arg Leu Pro Phe Cys Leu Thr Asn Ile Val 165 170 175		
Pro His Ser Tyr Cys Glu His Ile Gly Val Ala Arg Leu Ala Cys Ala 180 185 190		
Asp Ile Thr Val Asn Ile Trp Tyr Gly Phe Ser Val Pro Ile Val Met 195 200 205		
Val Ile Leu Asp Val Ile Leu Ile Ala Val Ser Tyr Ser Leu Ile Leu 210 215 220		
Arg Ala Val Phe Arg Leu Pro Ser Gln Asp Ala Arg His Lys Ala Leu 225 230 235 240		
Ser Thr Cys Gly Ser His Leu Cys Val Ile Leu Met Phe Tyr Val Pro 245 250 255		
Ser Phe Phe Thr Leu Leu Thr His His Phe Gly Arg Asn Ile Pro Gln 260 265 270		
His Val His Ile Leu Leu Ala Asn Leu Tyr Val Ala Val Pro Pro Met 275 280 285		
Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Glu Gly 290 295 300		
Val Ala His Arg Phe Phe Asp Ile Lys Thr Trp Cys Cys Thr Ser Pro 305 310 315 320		
Leu Gly Ser		

<210> 401  
<211> 963

<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(963)  
 <223>

<400> 401  
 atg gca gaa act cta caa ctc aat tcc acc ttc cta cac cca aac ttc 48  
 Met Ala Glu Thr Leu Gln Leu Asn Ser Thr Phe Leu His Pro Asn Phe  
 1 5 10 15  
 ttc ata ctg act ggc ttt cca ggg cta gga agt gcc cag act tgg ctg 96  
 Phe Ile Leu Thr Gly Phe Pro Gly Leu Gly Ser Ala Gln Thr Trp Leu  
 20 25 30  
 aca ctg gtc ttt ggg ccc att tat ctg ctg gcc ctg ctg ggc aat gga 144  
 Thr Leu Val Phe Gly Pro Ile Tyr Leu Leu Ala Leu Leu Gly Asn Gly  
 35 40 45  
 gca ctg ccg gca gtg gtg tgg ata gac tcc aca ctg cac cag ccc atg 192  
 Ala Leu Pro Ala Val Val Trp Ile Asp Ser Thr Leu His Gln Pro Met  
 50 55 60  
 ttt cta ctg ttg gcc atc ctg gca gcc aca gac ctg ggc tta gcc aca 240  
 Phe Leu Leu Leu Ala Ile Leu Ala Ala Thr Asp Leu Gly Leu Ala Thr  
 65 70 75 80  
 tct ata gcc cca ggg ttg ctg gct gtg ctg tgg ctt ggg ccc cga tct 288  
 Ser Ile Ala Pro Gly Leu Leu Ala Val Leu Trp Leu Gly Pro Arg Ser  
 85 90 95  
 gtg cca tat gct gtg tgc ctg gtc cag atg ttc ttt gta cat gca ctg 336  
 Val Pro Tyr Ala Val Cys Leu Val Gln Met Phe Phe Val His Ala Leu  
 100 105 110  
 act gcc atg gaa tca ggt gtg ctt ttg gcc atg gcc tgt gat cgt gct 384  
 Thr Ala Met Glu Ser Gly Val Leu Leu Ala Met Ala Cys Asp Arg Ala  
 115 120 125  
 gcg gca ata ggg cgt cca ctg cac tac cct gtc ctg gtc acc aaa gcc 432  
 Ala Ala Ile Gly Arg Pro Leu His Tyr Pro Val Leu Val Thr Lys Ala  
 130 135 140  
 tgt gtg ggt tat gca gcc ttg gcc ctg gca ctg aaa gct gtg gct att 480  
 Cys Val Gly Tyr Ala Ala Leu Ala Leu Ala Leu Lys Ala Val Ala Ile  
 145 150 155 160  
 gtt gta cct ttc cca ctg ctg gtg gca aag ttt gag cac ttc caa gcc 528  
 Val Val Pro Phe Pro Leu Leu Val Ala Lys Phe Glu His Phe Gln Ala  
 165 170 175  
 aag acc ata ggc cat acc tat tgt gca cac atg gca gtg gta gaa ctg 576  
 Lys Thr Ile Gly His Thr Tyr Cys Ala His Met Ala Val Val Glu Leu  
 180 185 190  
 gtg gtg ggt aac aca cag gcc acc aac tta tat ggt ctg gca ctt tca 624  
 Val Val Gly Asn Thr Gln Ala Thr Asn Leu Tyr Gly Leu Ala Leu Ser  
 195 200 205

ctg gcc atc tca ggt atg gat att ctg ggt atc act ggc tcc tat gga 672  
 Leu Ala Ile Ser Gly Met Asp Ile Leu Gly Ile Thr Gly Ser Tyr Gly  
 210 215 220

ctc att gcc cat gct gtg ctg cag cta cct acc cgg gag gcc cat gcc 720  
 Leu Ile Ala His Ala Val Leu Gln Leu Pro Thr Arg Glu Ala His Ala  
 225 230 235 240

aag gcc ttt ggt aca tgt agt tct cac atc tgt gtc att ctg gcc ttc 768  
 Lys Ala Phe Gly Thr Cys Ser Ser His Ile Cys Val Ile Leu Ala Phe  
 245 250 255

tac ata cct ggt ctc ttc tcc tac ctc aca cac cgc ttt ggt cat cac 816  
 Tyr Ile Pro Gly Leu Phe Ser Tyr Leu Thr His Arg Phe Gly His His  
 260 265 270

act gtc cca aag cct gtg cac atc ctt ctc tcc aac atc tac ttg ctg 864  
 Thr Val Pro Lys Pro Val His Ile Leu Leu Ser Asn Ile Tyr Leu Leu  
 275 280 285

ctg cca cct gcc ctc aac ccc ctc atc tat ggg gcc cgc acc aag cag 912  
 Leu Pro Pro Ala Leu Asn Pro Leu Ile Tyr Gly Ala Arg Thr Lys Gln  
 290 295 300

atc aga gac cga ctc ctg gaa acc ttc aca ttc aga aaa agc ccg ttg 960  
 Ile Arg Asp Arg Leu Leu Glu Thr Phe Thr Phe Arg Lys Ser Pro Leu  
 305 310 315 320

taa 963

<210> 402  
 <211> 320  
 <212> PRT  
 <213> Homo Sapiens

<400> 402

Met Ala Glu Thr Leu Gln Leu Asn Ser Thr Phe Leu His Pro Asn Phe  
 1 5 10 15

Phe Ile Leu Thr Gly Phe Pro Gly Leu Gly Ser Ala Gln Thr Trp Leu  
 20 25 30

Thr Leu Val Phe Gly Pro Ile Tyr Leu Leu Ala Leu Leu Gly Asn Gly  
 35 40 45

Ala Leu Pro Ala Val Val Trp Ile Asp Ser Thr Leu His Gln Pro Met  
 50 55 60

Phe Leu Leu Leu Ala Ile Leu Ala Ala Thr Asp Leu Gly Leu Ala Thr  
 65 70 75 80

Ser Ile Ala Pro Gly Leu Leu Ala Val Leu Trp Leu Gly Pro Arg Ser  
 85 90 95

Val Pro Tyr Ala Val Cys Leu Val Gln Met Phe Phe Val His Ala Leu  
100 105 110

Thr Ala Met Glu Ser Gly Val Leu Leu Ala Met Ala Cys Asp Arg Ala  
115 120 125

Ala Ala Ile Gly Arg Pro Leu His Tyr Pro Val Leu Val Thr Lys Ala  
130 135 140

Cys Val Gly Tyr Ala Ala Leu Ala Leu Ala Leu Lys Ala Val Ala Ile  
145 150 155 160

Val Val Pro Phe Pro Leu Leu Val Ala Lys Phe Glu His Phe Gln Ala  
165 170 175

Lys Thr Ile Gly His Thr Tyr Cys Ala His Met Ala Val Val Glu Leu  
180 185 190

Val Val Gly Asn Thr Gln Ala Thr Asn Leu Tyr Gly Leu Ala Leu Ser  
195 200 205

Leu Ala Ile Ser Gly Met Asp Ile Leu Gly Ile Thr Gly Ser Tyr Gly  
210 215 220

Leu Ile Ala His Ala Val Leu Gln Leu Pro Thr Arg Glu Ala His Ala  
225 230 235 240

Lys Ala Phe Gly Thr Cys Ser Ser His Ile Cys Val Ile Leu Ala Phe  
245 250 255

Tyr Ile Pro Gly Leu Phe Ser Tyr Leu Thr His Arg Phe Gly His His  
260 265 270

Thr Val Pro Lys Pro Val His Ile Leu Leu Ser Asn Ile Tyr Leu Leu  
275 280 285

Leu Pro Pro Ala Leu Asn Pro Leu Ile Tyr Gly Ala Arg Thr Lys Gln  
290 295 300

Ile Arg Asp Arg Leu Leu Glu Thr Phe Thr Phe Arg Lys Ser Pro Leu  
305 310 315 320

<210> 403

<211> 960

<212> DNA

&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) .. (957)

&lt;223&gt;

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<400> 403
atg gat acc tcc acc agt gtt acc tat gac tcc agc ctc cag att tcc      48
Met Asp Thr Ser Thr Ser Val Thr Tyr Asp Ser Ser Leu Gln Ile Ser
1          5          10          15

cag ttc atc ctg atg gga tta cca ggc att cat gag tgg cag cac tgg      96
Gln Phe Ile Leu Met Gly Leu Pro Gly Ile His Glu Trp Gln His Trp
20          25          30

ctc tcc ctg ccc ctg act ctg ctc tac ctc tta gct ctt ggt gcc aac      144
Leu Ser Leu Pro Leu Thr Leu Leu Tyr Leu Leu Ala Leu Gly Ala Asn
35          40          45

ctc ctc atc ata atc acc att caa cat gag acc gtg cta cat gaa ccc      192
Leu Leu Ile Ile Ile Thr Ile Gln His Glu Thr Val Leu His Glu Pro
50          55          60

atg tac cat ttg ctg ggc ata tta gca gtg gtg gac att ggc ctg gcc      240
Met Tyr His Leu Leu Gly Ile Leu Ala Val Val Asp Ile Gly Leu Ala
65          70          75          80

acc acc atc atg ccc aag atc ctg gcc atc ttc tgg ttt gat gcc aag      288
Thr Thr Ile Met Pro Lys Ile Leu Ala Ile Phe Trp Phe Asp Ala Lys
85          90          95

gcc att agc ctc ccc atg tgt ttt gct cag atc tat gcc atc cac tgc      336
Ala Ile Ser Leu Pro Met Cys Phe Ala Gln Ile Tyr Ala Ile His Cys
100          105          110

ttc ttc tgc ata gag tca ggc atc ttt ctc tgc atg gca gta gac aga      384
Phe Phe Cys Ile Glu Ser Gly Ile Phe Leu Cys Met Ala Val Asp Arg
115          120          125

tac ata gcc atc tgt cgc cct ctt cag tac ccc tcc ata gtc act aaa      432
Tyr Ile Ala Ile Cys Arg Pro Leu Gln Tyr Pro Ser Ile Val Thr Lys
130          135          140

gct ttt gtc ttc aaa gcc aca ggg ttc atc atg ctc agg aat ggc ctg      480
Ala Phe Val Phe Lys Ala Thr Gly Phe Ile Met Leu Arg Asn Gly Leu
145          150          155          160

ttg acc atc cca gtg cct ata ctg gct gcc cag aga cac tac tgt tcc      528
Leu Thr Ile Pro Val Pro Ile Leu Ala Ala Gln Arg His Tyr Cys Ser
165          170          175

agg aat gaa atc gag cac tgc ctc tgc tct aac ttg ggg gtt atc agc      576
Arg Asn Glu Ile Glu His Cys Leu Cys Ser Asn Leu Gly Val Ile Ser
180          185          190

ctg gct tgt gat gac atc act gtg aac aaa ttt tac caa ctg atg cta      624
Leu Ala Cys Asp Asp Ile Thr Val Asn Lys Phe Tyr Gln Leu Met Leu
195          200          205

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gca tgg gtc ttg gtt ggg agt gat atg gct ctg gta ttt tct tcc tat 672  
 Ala Trp Val Leu Val Gly Ser Asp Met Ala Leu Val Phe Ser Ser Tyr  
 210 215 220

gct gta atc ctt cac tct gtg ctg agg ctg aac tca gca gaa gca atg 720  
 Ala Val Ile Leu His Ser Val Leu Arg Leu Asn Ser Ala Glu Ala Met  
 225 230 235 240

tcc aag gct ctg agc act tgt agc tcc cac ctc atc ctc atc ctc ttc 768  
 Ser Lys Ala Leu Ser Thr Cys Ser Ser His Leu Ile Leu Ile Leu Phe  
 245 250 255

cac aca ggt atc att gtg ctg tct gtc aca cac ctt gca gag aaa aag 816  
 His Thr Gly Ile Ile Val Leu Ser Val Thr His Leu Ala Glu Lys Lys  
 260 265 270

att ccc ctt att cct gtg ttc ctt aat gtg ctg cac aat gtc atc ccc 864  
 Ile Pro Leu Ile Pro Val Phe Leu Asn Val Leu His Asn Val Ile Pro  
 275 280 285

cct gca ctc aac ccc ctg gcc tgt gca ctc agg atg cac aaa ctc aga 912  
 Pro Ala Leu Asn Pro Leu Ala Cys Ala Leu Arg Met His Lys Leu Arg  
 290 295 300

ctg ggc ttt cag aga ctg ctt gga ctg ggt cag gac gtg tcc aag taa 960  
 Leu Gly Phe Gln Arg Leu Leu Gly Leu Gly Gln Asp Val Ser Lys  
 305 310 315

<210> 404  
 <211> 319  
 <212> PRT  
 <213> Homo Sapiens

<400> 404

Met Asp Thr Ser Thr Ser Val Thr Tyr Asp Ser Ser Leu Gln Ile Ser  
 1 5 10 15

Gln Phe Ile Leu Met Gly Leu Pro Gly Ile His Glu Trp Gln His Trp  
 20 25 30

Leu Ser Leu Pro Leu Thr Leu Leu Tyr Leu Leu Ala Leu Gly Ala Asn  
 35 40 45

Leu Leu Ile Ile Ile Thr Ile Gln His Glu Thr Val Leu His Glu Pro  
 50 55 60

Met Tyr His Leu Leu Gly Ile Leu Ala Val Val Asp Ile Gly Leu Ala  
 65 70 75 80

Thr Thr Ile Met Pro Lys Ile Leu Ala Ile Phe Trp Phe Asp Ala Lys  
 85 90 95

Ala Ile Ser Leu Pro Met Cys Phe Ala Gln Ile Tyr Ala Ile His Cys

100                                      105                                      110  
 Phe Phe Cys Ile Glu Ser Gly Ile Phe Leu Cys Met Ala Val Asp Arg  
                  115                                      120                                      125  
 Tyr Ile Ala Ile Cys Arg Pro Leu Gln Tyr Pro Ser Ile Val Thr Lys  
                  130                                      135                                      140  
 Ala Phe Val Phe Lys Ala Thr Gly Phe Ile Met Leu Arg Asn Gly Leu  
                  145                                      150                                      155                                      160  
 Leu Thr Ile Pro Val Pro Ile Leu Ala Ala Gln Arg His Tyr Cys Ser  
    165                                      170                                      175  
 Arg Asn Glu Ile Glu His Cys Leu Cys Ser Asn Leu Gly Val Ile Ser  
    180                                      185                                      190  
 Leu Ala Cys Asp Asp Ile Thr Val Asn Lys Phe Tyr Gln Leu Met Leu  
    195                                      200                                      205  
 Ala Trp Val Leu Val Gly Ser Asp Met Ala Leu Val Phe Ser Ser Tyr  
    210                                      215                                      220  
 Ala Val Ile Leu His Ser Val Leu Arg Leu Asn Ser Ala Glu Ala Met  
    225                                      230                                      235                                      240  
 Ser Lys Ala Leu Ser Thr Cys Ser Ser His Leu Ile Leu Ile Leu Phe  
    245                                      250                                      255  
 His Thr Gly Ile Ile Val Leu Ser Val Thr His Leu Ala Glu Lys Lys  
    260                                      265                                      270  
 Ile Pro Leu Ile Pro Val Phe Leu Asn Val Leu His Asn Val Ile Pro  
    275                                      280                                      285  
 Pro Ala Leu Asn Pro Leu Ala Cys Ala Leu Arg Met His Lys Leu Arg  
    290                                      295                                      300  
 Leu Gly Phe Gln Arg Leu Leu Gly Leu Gly Gln Asp Val Ser Lys  
    305                                      310                                      315

<210> 405  
 <211> 963  
 <212> DNA  
 <213> Homo Sapiens

<220>

&lt;221&gt; CDS

&lt;222&gt; (1) .. (963)

&lt;223&gt;

&lt;400&gt; 405

atg gca gaa act cta caa ctc aat tcc acc ttc cta cac cca aac ttc	48
Met Ala Glu Thr Leu Gln Leu Asn Ser Thr Phe Leu His Pro Asn Phe	
1 5 10 15	
ttc ata ctg act ggc ttt cca ggg cta gga agt gcc cag act tgg ctg	96
Phe Ile Leu Thr Gly Phe Pro Gly Leu Gly Ser Ala Gln Thr Trp Leu	
20 25 30	
aca ctg gtc ttt ggg ccc att tat ctg ctg gcc ctg ctg ggc aat gga	144
Thr Leu Val Phe Gly Pro Ile Tyr Leu Leu Ala Leu Leu Gly Asn Gly	
35 40 45	
gca ctg ccg gca gtg gtg tgg ata gac tcc aca ctg cac cag ccc atg	192
Ala Leu Pro Ala Val Val Trp Ile Asp Ser Thr Leu His Gln Pro Met	
50 55 60	
ttt cta ctg ttg gcc atc ctg gca gcc aca gac ctg ggc tta gcc aca	240
Phe Leu Leu Leu Ala Ile Leu Ala Ala Thr Asp Leu Gly Leu Ala Thr	
65 70 75 80	
tct ata gcc cca ggg ttg ctg gct gtg ctg tgg ctt ggg ccc cga tct	288
Ser Ile Ala Pro Gly Leu Leu Ala Val Leu Trp Leu Gly Pro Arg Ser	
85 90 95	
gtg cca tat gct gtg tgc ctg gtc cag atg ttc ttt gta cat gca ctg	336
Val Pro Tyr Ala Val Cys Leu Val Gln Met Phe Phe Val His Ala Leu	
100 105 110	
act gcc atg gaa tca ggt gtg ctt ttg gcc atg gcc tgt gat cgt gct	384
Thr Ala Met Glu Ser Gly Val Leu Leu Ala Met Ala Cys Asp Arg Ala	
115 120 125	
gcg gca ata ggg cgt cca ctg cac tac cct gtc ctg gtc acc aaa gcc	432
Ala Ala Ile Gly Arg Pro Leu His Tyr Pro Val Leu Val Thr Lys Ala	
130 135 140	
tgt gtg ggt tat gca gcc ttg gcc ctg gca ctg aaa gct gtg gct att	480
Cys Val Gly Tyr Ala Ala Leu Ala Leu Ala Leu Lys Ala Val Ala Ile	
145 150 155 160	
gtt gta cct ttc cca ctg ctg gtg gca aag ttt gag cac ttc caa gcc	528
Val Val Pro Phe Pro Leu Leu Val Ala Lys Phe Glu His Phe Gln Ala	
165 170 175	
aag acc ata ggc cat acc tat tgt gca cac atg gca gtg gta gaa ctg	576
Lys Thr Ile Gly His Thr Tyr Cys Ala His Met Ala Val Val Glu Leu	
180 185 190	
gtg gtg ggt aac aca cag gcc acc aac tta tat ggt ctg gca ctt tca	624
Val Val Gly Asn Thr Gln Ala Thr Asn Leu Tyr Gly Leu Ala Leu Ser	
195 200 205	
ctg gcc atc tca ggt atg gat att ctg ggt atc act ggc tcc tat gga	672
Leu Ala Ile Ser Gly Met Asp Ile Leu Gly Ile Thr Gly Ser Tyr Gly	
210 215 220	

ctc att gcc cat gct gtg ctg cag cta cct acc cgg gag gcc cat gcc 720  
 Leu Ile Ala His Ala Val Leu Gln Leu Pro Thr Arg Glu Ala His Ala 240  
 225 230 235  
 aag gcc ttt ggt aca tgt agt tct cac atc tgt gtc att ctg gcc ttc 768  
 Lys Ala Phe Gly Thr Cys Ser Ser His Ile Cys Val Ile Leu Ala Phe 255  
 245 250  
 tac ata cct ggt ctc ttc tcc tac ctc gca cac cgc ttt ggt cat cac 816  
 Tyr Ile Pro Gly Leu Phe Ser Tyr Leu Ala His Arg Phe Gly His His 270  
 260 265  
 act gtc cca aag cct gtg cac atc ctt ctc tcc aac atc tac ttg ctg 864  
 Thr Val Pro Lys Pro Val His Ile Leu Leu Ser Asn Ile Tyr Leu Leu 285  
 275 280  
 ctg cca cct gcc ctc aac ccc ctc atc tat ggg gcc cgc acc aag cag 912  
 Leu Pro Pro Ala Leu Asn Pro Leu Ile Tyr Gly Ala Arg Thr Lys Gln 300  
 290 295  
 atc aga gac cga ctc ctg gaa acc ttc aca ttc aga aaa agc ccg ttg 960  
 Ile Arg Asp Arg Leu Leu Glu Thr Phe Thr Phe Arg Lys Ser Pro Leu 320  
 305 310 315  
 taa 963

<210> 406  
 <211> 320  
 <212> PRT  
 <213> Homo Sapiens

<400> 406

Met Ala Glu Thr Leu Gln Leu Asn Ser Thr Phe Leu His Pro Asn Phe 15  
 1 5 10

Phe Ile Leu Thr Gly Phe Pro Gly Leu Gly Ser Ala Gln Thr Trp Leu 30  
 20 25

Thr Leu Val Phe Gly Pro Ile Tyr Leu Leu Ala Leu Leu Gly Asn Gly 45  
 35 40

Ala Leu Pro Ala Val Val Trp Ile Asp Ser Thr Leu His Gln Pro Met 60  
 50 55

Phe Leu Leu Leu Ala Ile Leu Ala Ala Thr Asp Leu Gly Leu Ala Thr 80  
 65 70 75

Ser Ile Ala Pro Gly Leu Leu Ala Val Leu Trp Leu Gly Pro Arg Ser 95  
 85 90

Val Pro Tyr Ala Val Cys Leu Val Gln Met Phe Phe Val His Ala Leu 110  
 100 105

Thr Ala Met Glu Ser Gly Val Leu Leu Ala Met Ala Cys Asp Arg Ala  
 115 120 125

Ala Ala Ile Gly Arg Pro Leu His Tyr Pro Val Leu Val Thr Lys Ala  
 130 135 140

Cys Val Gly Tyr Ala Ala Leu Ala Leu Ala Leu Lys Ala Val Ala Ile  
 145 150 155 160

Val Val Pro Phe Pro Leu Leu Val Ala Lys Phe Glu His Phe Gln Ala  
 165 170 175

Lys Thr Ile Gly His Thr Tyr Cys Ala His Met Ala Val Val Glu Leu  
 180 185 190

Val Val Gly Asn Thr Gln Ala Thr Asn Leu Tyr Gly Leu Ala Leu Ser  
 195 200 205

Leu Ala Ile Ser Gly Met Asp Ile Leu Gly Ile Thr Gly Ser Tyr Gly  
 210 215 220

Leu Ile Ala His Ala Val Leu Gln Leu Pro Thr Arg Glu Ala His Ala  
 225 230 235 240

Lys Ala Phe Gly Thr Cys Ser Ser His Ile Cys Val Ile Leu Ala Phe  
 245 250 255

Tyr Ile Pro Gly Leu Phe Ser Tyr Leu Ala His Arg Phe Gly His His  
 260 265 270

Thr Val Pro Lys Pro Val His Ile Leu Leu Ser Asn Ile Tyr Leu Leu  
 275 280 285

Leu Pro Pro Ala Leu Asn Pro Leu Ile Tyr Gly Ala Arg Thr Lys Gln  
 290 295 300

Ile Arg Asp Arg Leu Leu Glu Thr Phe Thr Phe Arg Lys Ser Pro Leu  
 305 310 315 320

<210> 407

<211> 1008

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

&lt;222&gt; (1) .. (1005)

&lt;223&gt;

<400> 407  
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 aac agc ata ggt gct atg aac aac tct gac act cgc ata gca ggc tgc 96  
 Asn Ser Ile Gly Ala Met Asn Asn Ser Asp Thr Arg Ile Ala Gly Cys  
 20 25 30  
 ttc ctc act ggc atc cct ggg ctg gag caa cta cat atc tgg ctg tcc 144  
 Phe Leu Thr Gly Ile Pro Gly Leu Glu Gln Leu His Ile Trp Leu Ser  
 35 40 45  
 atc ccc ttc tgc atc atg tac atc gct gcc ctg gaa ggc aat ggc atc 192  
 Ile Pro Phe Cys Ile Met Tyr Ile Ala Ala Leu Glu Gly Asn Gly Ile  
 50 55 60  
 cta att tgt gtc atc ctc tcc cag gca atc ctg cat gag ccc atg tac 240  
 Leu Ile Cys Val Ile Leu Ser Gln Ala Ile Leu His Glu Pro Met Tyr  
 65 70 75 80  
 ata ttc tta tct atg ctg gcc agt gct gat gtc ttg ctc tct acc acc 288  
 Ile Phe Leu Ser Met Leu Ala Ser Ala Asp Val Leu Leu Ser Thr Thr  
 85 90 95  
 acc atg cct aag gcc ctg gcc aat ttg tgg cta ggt tat agc cac att 336  
 Thr Met Pro Lys Ala Leu Ala Asn Leu Trp Leu Gly Tyr Ser His Ile  
 100 105 110  
 tcc ttt gat ggc tgc ctc act caa aag ttc ttc att cac ttc ctc ttc 384  
 Ser Phe Asp Gly Cys Leu Thr Gln Lys Phe Phe Ile His Phe Leu Phe  
 115 120 125  
 att cac tct gct gtc ctg ctg gcc atg gcc ttt gac cgc tat gtg gcc 432  
 Ile His Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala  
 130 135 140  
 atc tgc tcc ccc ctg cga tat gtc aca atc ctc aca agc aag gtc att 480  
 Ile Cys Ser Pro Leu Arg Tyr Val Thr Ile Leu Thr Ser Lys Val Ile  
 145 150 155 160  
 ggg aag atc gtc act gcc acc ctg agc cgc agc ttc atc att atg ttt 528  
 Gly Lys Ile Val Thr Ala Thr Leu Ser Arg Ser Phe Ile Ile Met Phe  
 165 170 175  
 cca tcc atc ttt ctc ctt gag cac ctg cac tat tgc cag atc aac atc 576  
 Pro Ser Ile Phe Leu Leu Glu His Leu His Tyr Cys Gln Ile Asn Ile  
 180 185 190  
 att gca cac aca ttt tgt gag cac atg ggc att gcc cat ctg tcc tgt 624  
 Ile Ala His Thr Phe Cys Glu His Met Gly Ile Ala His Leu Ser Cys  
 195 200 205  
 tct gat atc tcc atc aat gtc tgg tat ggg ttg gca gct gct ctt ctc 672  
 Ser Asp Ile Ser Ile Asn Val Trp Tyr Gly Leu Ala Ala Ala Leu Leu  
 210 215 220

tcc aca ggc ctg gac atc atg ctt att act gtt tcc tac atc cac atc 720  
 Ser Thr Gly Leu Asp Ile Met Leu Ile Thr Val Ser Tyr Ile His Ile  
 225 230 235 240  
 ctc caa gca gtc ttc cgc ctc ctt tct caa gat gcc cgc tcc aag gcc 768  
 Leu Gln Ala Val Phe Arg Leu Leu Ser Gln Asp Ala Arg Ser Lys Ala  
 245 250 255  
 ctg agt acc tgt gga tcc cat atc tgt gtc atc cta ctc ttc tat gtc 816  
 Leu Ser Thr Cys Gly Ser His Ile Cys Val Ile Leu Leu Phe Tyr Val  
 260 265 270  
 cct gcc ctt ttt tct gtc ttt gcc tac agg ttt ggt ggg aga agc atc 864  
 Pro Ala Leu Phe Ser Val Phe Ala Tyr Arg Phe Gly Gly Arg Ser Ile  
 275 280 285  
 cca tgc tat gtc cat att ctc ctg gcc agc ctc tac gtt gtc att cct 912  
 Pro Cys Tyr Val His Ile Leu Leu Ala Ser Leu Tyr Val Val Ile Pro  
 290 295 300  
 cct atg ctc aat ccc gtt att tat gga gtg agg act aag cca ata ctg 960  
 Pro Met Leu Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Pro Ile Leu  
 305 310 315 320  
 gaa ggg gct aag cag atg ttt tca aat ctt gcc aaa gga tct aaa taa 1008  
 Glu Gly Ala Lys Gln Met Phe Ser Asn Leu Ala Lys Gly Ser Lys  
 325 330 335

<210> 408  
 <211> 335  
 <212> PRT  
 <213> Homo Sapiens

<400> 408

Met Ala Gln Val Arg Ala Leu His Lys Ile Met Ala Leu Phe Ser Ala  
1 5 10 15

Asn Ser Ile Gly Ala Met Asn Asn Ser Asp Thr Arg Ile Ala Gly Cys  
20 25 30

Phe Leu Thr Gly Ile Pro Gly Leu Glu Gln Leu His Ile Trp Leu Ser  
35 40 45

Ile Pro Phe Cys Ile Met Tyr Ile Ala Ala Leu Glu Gly Asn Gly Ile  
50 55 60

Leu Ile Cys Val Ile Leu Ser Gln Ala Ile Leu His Glu Pro Met Tyr  
65 70 75 80

Ile Phe Leu Ser Met Leu Ala Ser Ala Asp Val Leu Leu Ser Thr Thr  
85 90 95

Thr Met Pro Lys Ala Leu Ala Asn Leu Trp Leu Gly Tyr Ser His Ile

100 105 110  
 Ser Phe Asp Gly Cys Leu Thr Gln Lys Phe Phe Ile His Phe Leu Phe  
 115 120 125  
 Ile His Ser Ala Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala  
 130 135 140  
 Ile Cys Ser Pro Leu Arg Tyr Val Thr Ile Leu Thr Ser Lys Val Ile  
 145 150 155 160  
 Gly Lys Ile Val Thr Ala Thr Leu Ser Arg Ser Phe Ile Ile Met Phe  
 165 170 175  
 Pro Ser Ile Phe Leu Leu Glu His Leu His Tyr Cys Gln Ile Asn Ile  
 180 185 190  
 Ile Ala His Thr Phe Cys Glu His Met Gly Ile Ala His Leu Ser Cys  
 195 200 205  
 Ser Asp Ile Ser Ile Asn Val Trp Tyr Gly Leu Ala Ala Ala Leu Leu  
 210 215 220  
 Ser Thr Gly Leu Asp Ile Met Leu Ile Thr Val Ser Tyr Ile His Ile  
 225 230 235 240  
 Leu Gln Ala Val Phe Arg Leu Leu Ser Gln Asp Ala Arg Ser Lys Ala  
 245 250 255  
 Leu Ser Thr Cys Gly Ser His Ile Cys Val Ile Leu Leu Phe Tyr Val  
 260 265 270  
 Pro Ala Leu Phe Ser Val Phe Ala Tyr Arg Phe Gly Gly Arg Ser Ile  
 275 280 285  
 Pro Cys Tyr Val His Ile Leu Leu Ala Ser Leu Tyr Val Val Ile Pro  
 290 295 300  
 Pro Met Leu Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Pro Ile Leu  
 305 310 315 320  
 Glu Gly Ala Lys Gln Met Phe Ser Asn Leu Ala Lys Gly Ser Lys  
 325 330 335

<210> 409  
 <211> 957



<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (954)  
 <223>

<400> 409  
 atg tca gat tcc aac ctc agt gat aac cat ctt cca gac acc ttc ttc 48  
 Met Ser Asp Ser Asn Leu Ser Asp Asn His Leu Pro Asp Thr Phe Phe  
 1 5 10 15  
 tta aca ggg atc cca ggg ctg gag gct gcc cac ttc tgg att gcc atc 96  
 Leu Thr Gly Ile Pro Gly Leu Glu Ala Ala His Phe Trp Ile Ala Ile  
 20 25 30  
 cct ttc tgt gcc atg tat ctt gta gca ctg gtt gga aat gct gcc ctc 144  
 Pro Phe Cys Ala Met Tyr Leu Val Ala Leu Val Gly Asn Ala Ala Leu  
 35 40 45  
 atc ctg gtc att gcc atg gac aat gct ctt cat gca cct atg tac ctc 192  
 Ile Leu Val Ile Ala Met Asp Asn Ala Leu His Ala Pro Met Tyr Leu  
 50 55 60  
 ttc ctc tgc ctt ctc tca ctc aca gac ctg gct ctc agt tct acc act 240  
 Phe Leu Cys Leu Leu Ser Leu Thr Asp Leu Ala Leu Ser Ser Thr Thr  
 65 70 75 80  
 gtg ccc aag atg ctg gcc att ttg tgg ctc cat gct ggt gag att tcc 288  
 Val Pro Lys Met Leu Ala Ile Leu Trp Leu His Ala Gly Glu Ile Ser  
 85 90 95  
 ttt ggt gga tgc ctg gcc cag atg ttt tgt gtc cat tct atc tat gct 336  
 Phe Gly Gly Cys Leu Ala Gln Met Phe Cys Val His Ser Ile Tyr Ala  
 100 105 110  
 ctg gag tcc tgc att cta ctt gcc atg gcc ttt gat agg tat gtg gct 384  
 Leu Glu Ser Ser Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala  
 115 120 125  
 atc tgt aac cca tta agg tat aca acc att ctc aac cat gct gtc ata 432  
 Ile Cys Asn Pro Leu Arg Tyr Thr Thr Ile Leu Asn His Ala Val Ile  
 130 135 140  
 ggc aga att ggc ttt gtt ggg cta ttc cgt agt gtg gct att gtc tcc 480  
 Gly Arg Ile Gly Phe Val Gly Leu Phe Arg Ser Val Ala Ile Val Ser  
 145 150 155 160  
 ccc ttc atc ttc ttg ctg agg cga ctc ccc tac tgt ggt cac cgt gtc 528  
 Pro Phe Ile Phe Leu Leu Arg Arg Leu Pro Tyr Cys Gly His Arg Val  
 165 170 175  
 atg aca cac aca tac tgt gag cat atg ggc atc gcc cga ctg gcc tgt 576  
 Met Thr His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys  
 180 185 190  
 gcc aac atc act gtc aat att gtc tat ggg cta act gtg gct ctg ctg 624  
 Ala Asn Ile Thr Val Asn Ile Val Tyr Gly Leu Thr Val Ala Leu Leu  
 195 200 205

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gcc atg gga ctg gat tcc att ctc att gcc att tcc tat ggc ttt atc 672  
 Ala Met Gly Leu Asp Ser Ile Leu Ile Ala Ile Ser Tyr Gly Phe Ile  
 210 215 220  
 ctc cat gca gtc ttt cac ctt cca tct cat gat gcc cag cac aaa gct 720  
 Leu His Ala Val Phe His Leu Pro Ser His Asp Ala Gln His Lys Ala  
 225 230 235 240  
 ctg agt acc tgt ggc tcc cac att ggc atc atc ctg gtt ttc tac atc 768  
 Leu Ser Thr Cys Gly Ser His Ile Gly Ile Ile Leu Val Phe Tyr Ile  
 245 250 255  
 cct gcc ttc ttc tcc ttc ctc acc cac cgc ttt ggt cac cac gaa gtc 816  
 Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His His Glu Val  
 260 265 270  
 ccc aag cat gtg cac atc ttt ctg gct aat ctc tat gtg ctg gtg cct 864  
 Pro Lys His Val His Ile Phe Leu Ala Asn Leu Tyr Val Leu Val Pro  
 275 280 285  
 cct gta ctc aat cct att ctc tat gga gct aga acc aag gag att cgg 912  
 Pro Val Leu Asn Pro Ile Leu Tyr Gly Ala Arg Thr Lys Glu Ile Arg  
 290 295 300  
 agt cga ctt cta aaa ctg ctt cac ctg ggg aag act tca ata tga 957  
 Ser Arg Leu Leu Lys Leu Leu His Leu Gly Lys Thr Ser Ile  
 305 310 315

<210> 410  
 <211> 318  
 <212> PRT  
 <213> Homo Sapiens

<400> 410

Met Ser Asp Ser Asn Leu Ser Asp Asn His Leu Pro Asp Thr Phe Phe  
 1 5 10 15  
 Leu Thr Gly Ile Pro Gly Leu Glu Ala Ala His Phe Trp Ile Ala Ile  
 20 25 30  
 Pro Phe Cys Ala Met Tyr Leu Val Ala Leu Val Gly Asn Ala Ala Leu  
 35 40 45  
 Ile Leu Val Ile Ala Met Asp Asn Ala Leu His Ala Pro Met Tyr Leu  
 50 55 60  
 Phe Leu Cys Leu Leu Ser Leu Thr Asp Leu Ala Leu Ser Ser Thr Thr  
 65 70 75 80  
 Val Pro Lys Met Leu Ala Ile Leu Trp Leu His Ala Gly Glu Ile Ser  
 85 90 95

Phe Gly Gly Cys Leu Ala Gln Met Phe Cys Val His Ser Ile Tyr Ala  
 100 105 110

Leu Glu Ser Ser Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala  
 115 120 125

Ile Cys Asn Pro Leu Arg Tyr Thr Thr Ile Leu Asn His Ala Val Ile  
 130 135 140

Gly Arg Ile Gly Phe Val Gly Leu Phe Arg Ser Val Ala Ile Val Ser  
 145 150 155 160

Pro Phe Ile Phe Leu Leu Arg Arg Leu Pro Tyr Cys Gly His Arg Val  
 165 170 175

Met Thr His Thr Tyr Cys Glu His Met Gly Ile Ala Arg Leu Ala Cys  
 180 185 190

Ala Asn Ile Thr Val Asn Ile Val Tyr Gly Leu Thr Val Ala Leu Leu  
 195 200 205

Ala Met Gly Leu Asp Ser Ile Leu Ile Ala Ile Ser Tyr Gly Phe Ile  
 210 215 220

Leu His Ala Val Phe His Leu Pro Ser His Asp Ala Gln His Lys Ala  
 225 230 235 240

Leu Ser Thr Cys Gly Ser His Ile Gly Ile Ile Leu Val Phe Tyr Ile  
 245 250 255

Pro Ala Phe Phe Ser Phe Leu Thr His Arg Phe Gly His His Glu Val  
 260 265 270

Pro Lys His Val His Ile Phe Leu Ala Asn Leu Tyr Val Leu Val Pro  
 275 280 285

Pro Val Leu Asn Pro Ile Leu Tyr Gly Ala Arg Thr Lys Glu Ile Arg  
 290 295 300

Ser Arg Leu Leu Lys Leu Leu His Leu Gly Lys Thr Ser Ile  
 305 310 315

<210> 411

<211> 945

<212> DNA

<213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (945)  
 <223>

<400> 411  
 atg atc att ttc aac ctg agc agt tac aat cca gga ccc ttc att ctg 48  
 Met Ile Ile Phe Asn Leu Ser Ser Tyr Asn Pro Gly Pro Phe Ile Leu 15  
 1 5 10 15  
 gta ggg atc cca ggc ctg gag caa ttc cat gtg tgg att gga att ccc 96  
 Val Gly Ile Pro Gly Leu Glu Gln Phe His Val Trp Ile Gly Ile Pro 30  
 20 25 30  
 ttc tgt atc atc tac att gta gct gtt gtg gga aac tgc atc ctt ctc 144  
 Phe Cys Ile Ile Tyr Ile Val Ala Val Val Gly Asn Cys Ile Leu Leu 45  
 35 40 45  
 tac ctc att gtg gtg gag cat agt ctt cat gaa ccc atg ttc ttc ttt 192  
 Tyr Leu Ile Val Val Glu His Ser Leu His Glu Pro Met Phe Phe Phe 60  
 50 55 60  
 ctc tcc atg ctg gcc atg act gac ctc atc ttg tcc aca gct ggt gtg 240  
 Leu Ser Met Leu Ala Met Thr Asp Leu Ile Leu Ser Thr Ala Gly Val 80  
 65 70 75 80  
 cct aaa gca ctc agt atc ttt tgg cta ggg gct cgc gaa atc aca ttc 288  
 Pro Lys Ala Leu Ser Ile Phe Trp Leu Gly Ala Arg Glu Ile Thr Phe 95  
 85 90 95  
 cca gga tgc ctt aca caa atg ttc ttc ctt cac tat aac ttt gtc ctg 336  
 Pro Gly Cys Leu Thr Gln Met Phe Phe Leu His Tyr Asn Phe Val Leu 110  
 100 105 110  
 gat tca gcc att ctg atg gcc atg gca ttt gat cac tat gta gct atc 384  
 Asp Ser Ala Ile Leu Met Ala Met Ala Phe Asp His Tyr Val Ala Ile 125  
 115 120 125  
 tgt tct ccc ttg aga tat acc acc atc ttg act ccc aag acc atc atc 432  
 Cys Ser Pro Leu Arg Tyr Thr Thr Ile Leu Thr Pro Lys Thr Ile Ile 140  
 130 135 140  
 aag agt gct atg ggc atc tcc ttt cga agc ttc tgc atc atc ctg cca 480  
 Lys Ser Ala Met Gly Ile Ser Phe Arg Ser Phe Cys Ile Ile Leu Pro 160  
 145 150 155 160  
 gat gta ttc ttg ctg aca tgc ctg cct ttc tgc agg aca cgc atc ata 528  
 Asp Val Phe Leu Leu Thr Cys Leu Pro Phe Cys Arg Thr Arg Ile Ile 175  
 165 170 175  
 ccc cac aca tac tgt gag cat ata ggt gtt gcc cag ctc gcc tgt gct 576  
 Pro His Thr Tyr Cys Glu His Ile Gly Val Ala Gln Leu Ala Cys Ala 190  
 180 185 190  
 gat atc tcc atc aac ttc tgg tat ggc ttt tgt gtt ccc atc atg acg 624  
 Asp Ile Ser Ile Asn Phe Trp Tyr Gly Phe Cys Val Pro Ile Met Thr 205  
 195 200 205  
 gtc atc tca gat gtg att ctc att gct gtt tcc tac gca cac atc ctc 672  
 Val Ile Ser Asp Val Ile Leu Ile Ala Val Ser Tyr Ala His Ile Leu

210	215	220	
tgt gct gtc ttt ggc ctt	ccc tcc caa gat gcc tgc cag aaa gcc ctc		720
Cys Ala Val Phe Gly Leu	Pro Ser Gln Asp Ala Cys Gln Lys Ala Leu		
225	230	235	240
ggc act tgt ggt tct cat	gtc tgt gtc atc ctc atg ttt tat aca cct		768
Gly Thr Cys Gly Ser His	Val Cys Val Ile Leu Met Phe Tyr Thr Pro		
245	250	255	
gcc ttt ttc tcc atc ctc	gcc cat cgc ttt gga cac aat gtc tct cgc		816
Ala Phe Phe Ser Ile Leu	Ala His Arg Phe Gly His Asn Val Ser Arg		
260	265	270	
acc ttc cac atc atg ttt	gcc aat ctc tac att gtt atc cca cct gca		864
Thr Phe His Ile Met Phe	Ala Asn Leu Tyr Ile Val Ile Pro Pro Ala		
275	280	285	
ctc aac ccc atg gtt tac	gga gtg aag acc aag cag atc aga gat aag		912
Leu Asn Pro Met Val Tyr	Gly Val Lys Thr Lys Gln Ile Arg Asp Lys		
290	295	300	
gtt ata ctt ttg ttt tct	aag ggt aca gga tga		945
Val Ile Leu Leu Phe Ser	Lys Gly Thr Gly		
305	310		

<210> 412  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 412

Met Ile Ile Phe Asn Leu Ser Ser Tyr Asn Pro Gly Pro Phe Ile Leu
1 5 10 15

Val Gly Ile Pro Gly Leu Glu Gln Phe His Val Trp Ile Gly Ile Pro
20 25 30

Phe Cys Ile Ile Tyr Ile Val Ala Val Val Gly Asn Cys Ile Leu Leu
35 40 45

Tyr Leu Ile Val Val Glu His Ser Leu His Glu Pro Met Phe Phe Phe
50 55 60

Leu Ser Met Leu Ala Met Thr Asp Leu Ile Leu Ser Thr Ala Gly Val
65 70 75 80

Pro Lys Ala Leu Ser Ile Phe Trp Leu Gly Ala Arg Glu Ile Thr Phe
85 90 95

Pro Gly Cys Leu Thr Gln Met Phe Phe Leu His Tyr Asn Phe Val Leu
100 105 110

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Asp Ser Ala Ile Leu Met Ala Met Ala Phe Asp His Tyr Val Ala Ile  
 115 120 125

Cys Ser Pro Leu Arg Tyr Thr Thr Ile Leu Thr Pro Lys Thr Ile Ile  
 130 135 140

Lys Ser Ala Met Gly Ile Ser Phe Arg Ser Phe Cys Ile Ile Leu Pro  
 145 150 155 160

Asp Val Phe Leu Leu Thr Cys Leu Pro Phe Cys Arg Thr Arg Ile Ile  
 165 170 175

Pro His Thr Tyr Cys Glu His Ile Gly Val Ala Gln Leu Ala Cys Ala  
 180 185 190

Asp Ile Ser Ile Asn Phe Trp Tyr Gly Phe Cys Val Pro Ile Met Thr  
 195 200 205

Val Ile Ser Asp Val Ile Leu Ile Ala Val Ser Tyr Ala His Ile Leu  
 210 215 220

Cys Ala Val Phe Gly Leu Pro Ser Gln Asp Ala Cys Gln Lys Ala Leu  
 225 230 235 240

Gly Thr Cys Gly Ser His Val Cys Val Ile Leu Met Phe Tyr Thr Pro  
 245 250 255

Ala Phe Phe Ser Ile Leu Ala His Arg Phe Gly His Asn Val Ser Arg  
 260 265 270

Thr Phe His Ile Met Phe Ala Asn Leu Tyr Ile Val Ile Pro Pro Ala  
 275 280 285

Leu Asn Pro Met Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Asp Lys  
 290 295 300

Val Ile Leu Leu Phe Ser Lys Gly Thr Gly  
 305 310

<210> 413  
 <211> 939  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (936)

&lt;223&gt;

&lt;400&gt; 413

atg ggg ttg ttc aat gtc act cac cct gca ttc ttc ctc ctg act ggt	48
Met Gly Leu Phe Asn Val Thr His Pro Ala Phe Phe Leu Leu Thr Gly	
1 5 10 15	
atc cct ggt ctg gag agc tct cac tcc tgg ctg tca ggg ccc ctc tgc	96
Ile Pro Gly Leu Glu Ser Ser His Ser Trp Leu Ser Gly Pro Leu Cys	
20 25 30	
gtg atg tat gct gtg gcc ctt ggg gga aat aca gtg atc ctg cag gct	144
Val Met Tyr Ala Val Ala Leu Gly Gly Asn Thr Val Ile Leu Gln Ala	
35 40 45	
gtg cga gtg gag ccc agc ctc cat gag ccc atg tac tac ttc ctg tcc	192
Val Arg Val Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe Leu Ser	
50 55 60	
atg ttg tcc ttc agt gat gtg gcc ata tcc atg gcc aca ctg ccc act	240
Met Leu Ser Phe Ser Asp Val Ala Ile Ser Met Ala Thr Leu Pro Thr	
65 70 75 80	
gta ctc cga acc ttc tgc ctc aat gcc cgc aac atc act ttt gat gcc	288
Val Leu Arg Thr Phe Cys Leu Asn Ala Arg Asn Ile Thr Phe Asp Ala	
85 90 95	
tgt cta att cag atg ttt ctt att cac ttc ttc tcc atg atg gaa tca	336
Cys Leu Ile Gln Met Phe Leu Ile His Phe Phe Ser Met Met Glu Ser	
100 105 110	
ggg att ctg ctg gcc atg agt ttt gac cgc tat gtg gcc att tgt gac	384
Gly Ile Leu Leu Ala Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asp	
115 120 125	
ccc ttg cgc tat gca act gtg ctc acc act gaa gtc att gct gca atg	432
Pro Leu Arg Tyr Ala Thr Val Leu Thr Thr Glu Val Ile Ala Ala Met	
130 135 140	
ggg tta ggt gca gct gct cga agc ttc atc acc ctt ttc cct ctt ccc	480
Gly Leu Gly Ala Ala Ala Arg Ser Phe Ile Thr Leu Phe Pro Leu Pro	
145 150 155 160	
ttt ctt att aag agg ctg cct atc tgc aga tcc aat gtt ctt tct cac	528
Phe Leu Ile Lys Arg Leu Pro Ile Cys Arg Ser Asn Val Leu Ser His	
165 170 175	
tcc tac tgc ctg cac cca gac atg atg agg ctt gcc tgt gct gat atc	576
Ser Tyr Cys Leu His Pro Asp Met Met Arg Leu Ala Cys Ala Asp Ile	
180 185 190	
agt atc aac agc atc tat gga ctc ttt gtt ctt gta tcc acc ttt ggc	624
Ser Ile Asn Ser Ile Tyr Gly Leu Phe Val Leu Val Ser Thr Phe Gly	
195 200 205	
atg gac ctg ttt ttt atc ttc ctc tcc tat gtg ctc att ctg cgt tct	672
Met Asp Leu Phe Phe Ile Phe Leu Ser Tyr Val Leu Ile Leu Arg Ser	
210 215 220	
gtc atg gcc act gct tcc cgt gag gaa cgc ctc aaa gct ctc aac aca	720

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Val Met Ala Thr Ala Ser Arg Glu Glu Arg Leu Lys Ala Leu Asn Thr 240  
 225 230 235

tgt gtg tca cat atc ctg gct gta ctt gca ttt tat gtg cca atg att 768  
 Cys Val Ser His Ile Leu Ala Val Leu Ala Phe Tyr Val Pro Met Ile 255  
 245 250

ggg gtc tcc aca gtg cac cgc ttt ggg aag cat gtc cca tgc tac ata 816  
 Gly Val Ser Thr Val His Arg Phe Gly Lys His Val Pro Cys Tyr Ile 270  
 260 265

cat gtc ctc atg tca aat gtg tac cta ttt gtg cct cct gtg ctc aac 864  
 His Val Leu Met Ser Asn Val Tyr Leu Phe Val Pro Pro Val Leu Asn 285  
 275 280

cct ctc att tat agc gcc aag aca aag gaa atc cgc cga gcc att ttc 912  
 Pro Leu Ile Tyr Ser Ala Lys Thr Lys Glu Ile Arg Arg Ala Ile Phe 300  
 290 295

cgc atg ttt cac cac atc aaa ata tga 939  
 Arg Met Phe His His Ile Lys Ile 310  
 305

<210> 414  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 414

Met Gly Leu Phe Asn Val Thr His Pro Ala Phe Phe Leu Leu Thr Gly 15  
 1 5 10

Ile Pro Gly Leu Glu Ser Ser His Ser Trp Leu Ser Gly Pro Leu Cys 30  
 20 25

Val Met Tyr Ala Val Ala Leu Gly Gly Asn Thr Val Ile Leu Gln Ala 45  
 35 40

Val Arg Val Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe Leu Ser 60  
 50 55

Met Leu Ser Phe Ser Asp Val Ala Ile Ser Met Ala Thr Leu Pro Thr 80  
 65 70 75

Val Leu Arg Thr Phe Cys Leu Asn Ala Arg Asn Ile Thr Phe Asp Ala 95  
 85 90

Cys Leu Ile Gln Met Phe Leu Ile His Phe Phe Ser Met Met Glu Ser 110  
 100 105

Gly Ile Leu Leu Ala Met Ser Phe Asp Arg Tyr Val Ala Ile Cys Asp 125  
 115 120



Pro Leu Arg Tyr Ala Thr Val Leu Thr Thr Glu Val Ile Ala Ala Met  
 130 135 140

Gly Leu Gly Ala Ala Ala Arg Ser Phe Ile Thr Leu Phe Pro Leu Pro  
 145 150 155 160

Phe Leu Ile Lys Arg Leu Pro Ile Cys Arg Ser Asn Val Leu Ser His  
 165 170 175

Ser Tyr Cys Leu His Pro Asp Met Met Arg Leu Ala Cys Ala Asp Ile  
 180 185 190

Ser Ile Asn Ser Ile Tyr Gly Leu Phe Val Leu Val Ser Thr Phe Gly  
 195 200 205

Met Asp Leu Phe Phe Ile Phe Leu Ser Tyr Val Leu Ile Leu Arg Ser  
 210 215 220

Val Met Ala Thr Ala Ser Arg Glu Glu Arg Leu Lys Ala Leu Asn Thr  
 225 230 235 240

Cys Val Ser His Ile Leu Ala Val Leu Ala Phe Tyr Val Pro Met Ile  
 245 250 255

Gly Val Ser Thr Val His Arg Phe Gly Lys His Val Pro Cys Tyr Ile  
 260 265 270

His Val Leu Met Ser Asn Val Tyr Leu Phe Val Pro Pro Val Leu Asn  
 275 280 285

Pro Leu Ile Tyr Ser Ala Lys Thr Lys Glu Ile Arg Arg Ala Ile Phe  
 290 295 300

Arg Met Phe His His Ile Lys Ile  
 305 310

<210> 415  
 <211> 945  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (942)  
 <223>

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<400> 415  
 atg ctg ggt ctc aat ggc acc ccc ttc cag cca gca aca ctc cag ctg 48  
 Met Leu Gly Leu Asn Gly Thr Pro Phe Gln Pro Ala Thr Leu Gln Leu 15  
 1 5 10

aca ggc att cct ggg ata caa aca ggc ctc acc tgg gtt gcc ctg att 96  
 Thr Gly Ile Pro Gly Ile Gln Thr Gly Leu Thr Trp Val Ala Leu Ile 30  
 20 25

ttc tgc atc ctc tac atg atc tcc att gta ggt aac ctc agc att ctc 144  
 Phe Cys Ile Leu Tyr Met Ile Ser Ile Val Gly Asn Leu Ser Ile Leu 45  
 35 40

act ctg gtg ttt tgg gag cct gct ctg cat cag ccc atg tac tac ttc 192  
 Thr Leu Val Phe Trp Glu Pro Ala Leu His Gln Pro Met Tyr Tyr Phe 60  
 50 55

ctc tct atg ctc gct ctc aat gat ctg gga gtg tcc ttt tct aca ctt 240  
 Leu Ser Met Leu Ala Leu Asn Asp Leu Gly Val Ser Phe Ser Thr Leu 80  
 65 70 75

ccc act gtg att tct act ttc tgc ttc aac tac aac cat gtt gcg ttt 288  
 Pro Thr Val Ile Ser Thr Phe Cys Phe Asn Tyr Asn His Val Ala Phe 95  
 85 90

aat gct tgc ctg gtc cag atg ttc ttc atc cac act ttc tcc ttc atg 336  
 Asn Ala Cys Leu Val Gln Met Phe Phe Ile His Thr Phe Ser Phe Met 110  
 100 105

gag tca ggc ata ctg ctg gcc atg agc ttg gat cgc ttt gtg gct att 384  
 Glu Ser Gly Ile Leu Leu Ala Met Ser Leu Asp Arg Phe Val Ala Ile 125  
 115 120

tgt tat cca tta cgc tat gtc act gtg ctc act cac aac cgt ata ttg 432  
 Cys Tyr Pro Leu Arg Tyr Val Thr Val Leu Thr His Asn Arg Ile Leu 140  
 130 135

gct atg ggt ctg ggc atc ctt acc aag agt ttc acc act ctc ttc cct 480  
 Ala Met Gly Leu Gly Ile Leu Thr Lys Ser Phe Thr Thr Leu Phe Pro 160  
 145 150 155

ttc cct ttt gtg gtg aaa cga ctg ccc ttc tgc aaa ggc aat gtt ttg 528  
 Phe Pro Phe Val Val Lys Arg Leu Pro Phe Cys Lys Gly Asn Val Leu 175  
 165 170

cat cac tcc tac tgt ctc cat cca gat ctc atg aaa gta gca tgt gga 576  
 His His Ser Tyr Cys Leu His Pro Asp Leu Met Lys Val Ala Cys Gly 190  
 180 185

gac atc cat gtt aac aac att tat ggg ctc ttg gtg atc att ttt acc 624  
 Asp Ile His Val Asn Asn Ile Tyr Gly Leu Leu Val Ile Ile Phe Thr 205  
 195 200

tat ggt atg gac tca act ttc atc ctg ctt tcc tac gca ttg atc ctg 672  
 Tyr Gly Met Asp Ser Thr Phe Ile Leu Leu Ser Tyr Ala Leu Ile Leu 220  
 210 215

aga gcc atg ctg gtc atc ata tcc cag gaa cag cgg ctc aag gca ctc 720  
 Arg Ala Met Leu Val Ile Ile Ser Gln Glu Gln Arg Leu Lys Ala Leu 240  
 225 230 235

aac acc tgc atg tca cac atc tgt gca gtg ctg gcc ttt tat gtg ccc 768  
 Asn Thr Cys Met Ser His Ile Cys Ala Val Leu Ala Phe Tyr Val Pro  
 245 250 255

ata att gct gtc tcc atg att cac cgc ttc tgg aaa agt gct cca cct 816  
 Ile Ile Ala Val Ser Met Ile His Arg Phe Trp Lys Ser Ala Pro Pro  
 260 265 270

gtt gtt cat gtc atg atg tcc aat gtc tac ctg ttt gta cca ccc atg 864  
 Val Val His Val Met Met Ser Asn Val Tyr Leu Phe Val Pro Pro Met  
 275 280 285

ctc aac cct atc atc tac agt gtg aaa acc aag gag atc cgc aaa ggg 912  
 Leu Asn Pro Ile Ile Tyr Ser Val Lys Thr Lys Glu Ile Arg Lys Gly  
 290 295 300

att ctc aag ttc ttc cat aaa tcc cag gcc tga 945  
 Ile Leu Lys Phe Phe His Lys Ser Gln Ala  
 305 310

<210> 416

<211> 314

<212> PRT

<213> Homo Sapiens

<400> 416

Met Leu Gly Leu Asn Gly Thr Pro Phe Gln Pro Ala Thr Leu Gln Leu  
 1 5 10 15

Thr Gly Ile Pro Gly Ile Gln Thr Gly Leu Thr Trp Val Ala Leu Ile  
 20 25 30

Phe Cys Ile Leu Tyr Met Ile Ser Ile Val Gly Asn Leu Ser Ile Leu  
 35 40 45

Thr Leu Val Phe Trp Glu Pro Ala Leu His Gln Pro Met Tyr Tyr Phe  
 50 55 60

Leu Ser Met Leu Ala Leu Asn Asp Leu Gly Val Ser Phe Ser Thr Leu  
 65 70 75 80

Pro Thr Val Ile Ser Thr Phe Cys Phe Asn Tyr Asn His Val Ala Phe  
 85 90 95

Asn Ala Cys Leu Val Gln Met Phe Phe Ile His Thr Phe Ser Phe Met  
 100 105 110

Glu Ser Gly Ile Leu Leu Ala Met Ser Leu Asp Arg Phe Val Ala Ile  
 115 120 125

Cys Tyr Pro Leu Arg Tyr Val Thr Val Leu Thr His Asn Arg Ile Leu

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130

135

140

Ala Met Gly Leu Gly Ile Leu Thr Lys Ser Phe Thr Thr Leu Phe Pro  
 145 150 155 160

Phe Pro Phe Val Val Lys Arg Leu Pro Phe Cys Lys Gly Asn Val Leu  
 165 170 175

His His Ser Tyr Cys Leu His Pro Asp Leu Met Lys Val Ala Cys Gly  
 180 185 190

Asp Ile His Val Asn Asn Ile Tyr Gly Leu Leu Val Ile Ile Phe Thr  
 195 200 205

Tyr Gly Met Asp Ser Thr Phe Ile Leu Leu Ser Tyr Ala Leu Ile Leu  
 210 215 220

Arg Ala Met Leu Val Ile Ile Ser Gln Glu Gln Arg Leu Lys Ala Leu  
 225 230 235 240

Asn Thr Cys Met Ser His Ile Cys Ala Val Leu Ala Phe Tyr Val Pro  
 245 250 255

Ile Ile Ala Val Ser Met Ile His Arg Phe Trp Lys Ser Ala Pro Pro  
 260 265 270

Val Val His Val Met Met Ser Asn Val Tyr Leu Phe Val Pro Pro Met  
 275 280 285

Leu Asn Pro Ile Ile Tyr Ser Val Lys Thr Lys Glu Ile Arg Lys Gly  
 290 295 300

Ile Leu Lys Phe Phe His Lys Ser Gln Ala  
 305 310

<210> 417  
 <211> 981  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1)..(978)  
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<400> 417  
 atg tca gtc caa tat tcg ctc agt cct caa ttc atg ctg cta tcc aac  
 Met Ser Val Gln Tyr Ser Leu Ser Pro Gln Phe Met Leu Leu Ser Asn

48

1	5	10	15	
att act cag ttt agc ccc ata ttc tat ctc acc agc ttt cct gga ttg				96
Ile Thr Gln Phe Ser Pro Ile Phe Tyr Leu Thr Ser Phe Pro Gly Leu				
20	25	30		
gaa ggc atc aaa cac tgg att ttc atc ccc ttt ttc ttt atg tac atg				144
Glu Gly Ile Lys His Trp Ile Phe Ile Pro Phe Phe Phe Met Tyr Met				
35	40	45		
gtt gcc atc tca ggc aat tgt ttc att ctg atc att att aag acc aac				192
Val Ala Ile Ser Gly Asn Cys Phe Ile Leu Ile Ile Ile Lys Thr Asn				
50	55	60		
cct cgt ctg cac aca ccc atg tac tat cta cta tcc ttg ctg gcc ctc				240
Pro Arg Leu His Thr Pro Met Tyr Tyr Leu Leu Ser Leu Leu Ala Leu				
65	70	75	80	
act gac ctg ggg ctg tgt gtg tcc acg ttg ccc acc act atg ggg atc				288
Thr Asp Leu Gly Leu Cys Val Ser Thr Leu Pro Thr Thr Met Gly Ile				
85	90	95		
ttc tgg ttt aac tcc cag agt atc tac ttt gga gcg tgt caa atc cag				336
Phe Trp Phe Asn Ser Gln Ser Ile Tyr Phe Gly Ala Cys Gln Ile Gln				
100	105	110		
atg ttc tgc atc cac tct ttt tcc ttc atg gag tcc tca gtg ctc ctc				384
Met Phe Cys Ile His Ser Phe Ser Phe Met Glu Ser Ser Val Leu Leu				
115	120	125		
atg atg tcc ttt gac cgc ttt gtg gcc atc tgc cac cct ctg agg tat				432
Met Met Ser Phe Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg Tyr				
130	135	140		
tcg gtc att atc act ggc cag caa gtg gtc aga gca ggc cta att gtc				480
Ser Val Ile Ile Thr Gly Gln Gln Val Val Arg Ala Gly Leu Ile Val				
145	150	155	160	
atc ttc cgg gga cct gtg gcc act atc cct att gtc ctc ctc ctg aag				528
Ile Phe Arg Gly Pro Val Ala Thr Ile Pro Ile Val Leu Leu Leu Lys				
165	170	175		
gct ttt ccc tac tgt gga tct gtg gtc ctc tcc cac tca ttt tgc ctg				576
Ala Phe Pro Tyr Cys Gly Ser Val Val Leu Ser His Ser Phe Cys Leu				
180	185	190		
cac cag gaa gtg ata cag ctg gcc tgc aca gat acc acc ttc aat aat				624
His Gln Glu Val Ile Gln Leu Ala Cys Thr Asp Thr Thr Phe Asn Asn				
195	200	205		
ctg tat gga ctg atg gtg gta gtt ttc act gtg atg ctg gac ctg gtg				672
Leu Tyr Gly Leu Met Val Val Val Phe Thr Val Met Leu Asp Leu Val				
210	215	220		
ctc atc gca ctg tcc tat gga ctc atc ctg cac aca gta gca ggc ctg				720
Leu Ile Ala Leu Ser Tyr Gly Leu Ile Leu His Thr Val Ala Gly Leu				
225	230	235	240	
gcc tcc caa gag gag cag cgc cgt gcc ttt cag aca tgc acc gct cat				768
Ala Ser Gln Glu Glu Gln Arg Arg Ala Phe Gln Thr Cys Thr Ala His				
245	250	255		

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ctc tgt gct gtg cta gta ttc ttt gtg ccc atg atg ggg ctg tcc ctg 816  
 Leu Cys Ala Val Leu Val Phe Phe Val Pro Met Met Gly Leu Ser Leu  
 260 265 270

gtg cac cgt ttt ggg aag cat gcc cca cct gct att cat ctt ctt atg 864  
 Val His Arg Phe Gly Lys His Ala Pro Pro Ala Ile His Leu Leu Met  
 275 280 285

gcc aat gtc tac ctt ttt gtg cct ccc atg ctt aac cca atc ata tac 912  
 Ala Asn Val Tyr Leu Phe Val Pro Pro Met Leu Asn Pro Ile Ile Tyr  
 290 295 300

agc att aag acc aag gag atc cac cgt gcc att atc aaa ctc cta ggt 960  
 Ser Ile Lys Thr Lys Glu Ile His Arg Ala Ile Ile Lys Leu Leu Gly  
 305 310 315 320

ctt aaa aag gcc agt aaa tga 981  
 Leu Lys Lys Ala Ser Lys  
 325

<210> 418  
 <211> 326  
 <212> PRT  
 <213> Homo Sapiens

<400> 418

Met Ser Val Gln Tyr Ser Leu Ser Pro Gln Phe Met Leu Leu Ser Asn  
 1 5 10 15

Ile Thr Gln Phe Ser Pro Ile Phe Tyr Leu Thr Ser Phe Pro Gly Leu  
 20 25 30

Glu Gly Ile Lys His Trp Ile Phe Ile Pro Phe Phe Phe Met Tyr Met  
 35 40 45

Val Ala Ile Ser Gly Asn Cys Phe Ile Leu Ile Ile Ile Lys Thr Asn  
 50 55 60

Pro Arg Leu His Thr Pro Met Tyr Tyr Leu Leu Ser Leu Leu Ala Leu  
 65 70 75 80

Thr Asp Leu Gly Leu Cys Val Ser Thr Leu Pro Thr Thr Met Gly Ile  
 85 90 95

Phe Trp Phe Asn Ser Gln Ser Ile Tyr Phe Gly Ala Cys Gln Ile Gln  
 100 105 110

Met Phe Cys Ile His Ser Phe Ser Phe Met Glu Ser Ser Val Leu Leu  
 115 120 125

Met Met Ser Phe Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg Tyr  
 130 135 140

Ser Val Ile Ile Thr Gly Gln Gln Val Val Arg Ala Gly Leu Ile Val  
 145 150 155 160

Ile Phe Arg Gly Pro Val Ala Thr Ile Pro Ile Val Leu Leu Leu Lys  
 165 170 175

Ala Phe Pro Tyr Cys Gly Ser Val Val Leu Ser His Ser Phe Cys Leu  
 180 185 190

His Gln Glu Val Ile Gln Leu Ala Cys Thr Asp Thr Thr Phe Asn Asn  
 195 200 205

Leu Tyr Gly Leu Met Val Val Val Phe Thr Val Met Leu Asp Leu Val  
 210 215 220

Leu Ile Ala Leu Ser Tyr Gly Leu Ile Leu His Thr Val Ala Gly Leu  
 225 230 235 240

Ala Ser Gln Glu Glu Gln Arg Arg Ala Phe Gln Thr Cys Thr Ala His  
 245 250 255

Leu Cys Ala Val Leu Val Phe Phe Val Pro Met Met Gly Leu Ser Leu  
 260 265 270

Val His Arg Phe Gly Lys His Ala Pro Pro Ala Ile His Leu Leu Met  
 275 280 285

Ala Asn Val Tyr Leu Phe Val Pro Pro Met Leu Asn Pro Ile Ile Tyr  
 290 295 300

Ser Ile Lys Thr Lys Glu Ile His Arg Ala Ile Ile Lys Leu Leu Gly  
 305 310 315 320

Leu Lys Lys Ala Ser Lys  
 325

<210> 419  
 <211> 954  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (951)  
 <223>

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<400> 419  
 atg tcc cag gtg act aac acc aca caa gaa ggc atc tac ttc atc ctc 48  
 Met Ser Gln Val Thr Asn Thr Thr Gln Glu Gly Ile Tyr Phe Ile Leu 15  
 1 5 10

acg gac atc cct gga ttt gag gcc tcc cac atc tgg atc tcc atc ccc 96  
 Thr Asp Ile Pro Gly Phe Glu Ala Ser His Ile Trp Ile Ser Ile Pro 30  
 20 25

gtc tgc tgt ctc tac acc atc tcc atc atg ggc aat acc acc atc ctc 144  
 Val Cys Cys Leu Tyr Thr Ile Ser Ile Met Gly Asn Thr Thr Ile Leu 45  
 35 40

act gtc att cgc aca gag cca tct gtc cac cag cgc atg tat ctg ttt 192  
 Thr Val Ile Arg Thr Glu Pro Ser Val His Gln Arg Met Tyr Leu Phe 60  
 50 55

ctc tcc atg ctg gcc ctg acg gac ctg ggt ctc acc ctc acc acc cta 240  
 Leu Ser Met Leu Ala Leu Thr Asp Leu Gly Leu Thr Leu Thr Thr Leu 80  
 65 70 75

ccc aca gtc atg cag ctt ctc tgg ttc aac gtt cgt aga atc agc tct 288  
 Pro Thr Val Met Gln Leu Leu Trp Phe Asn Val Arg Arg Ile Ser Ser 95  
 85 90

gag gcc tgt ttt gct cag ttt ttc ttc ctt cat gga ttc tcc ttt atg 336  
 Glu Ala Cys Phe Ala Gln Phe Phe Phe Leu His Gly Phe Ser Phe Met 110  
 100 105

gag tct tct gtc ctc ctg gct atg tcc gtt gac tgc tat gtg gcc atc 384  
 Glu Ser Ser Val Leu Leu Ala Met Ser Val Asp Cys Tyr Val Ala Ile 125  
 115 120

tgc tgt ccc ctc cat tat gcc tcc atc ctc acc aat gaa gtc att ggt 432  
 Cys Cys Pro Leu His Tyr Ala Ser Ile Leu Thr Asn Glu Val Ile Gly 140  
 130 135

aga act ggg tta gcc atc att tgc tgc tgt gtt ctg gcg gtt ctt ccc 480  
 Arg Thr Gly Leu Ala Ile Ile Cys Cys Cys Val Leu Ala Val Leu Pro 160  
 145 150 155

tcc ctt ttc tta ctc aag cga ctg cct ttc tgc cac tcc cac ctt ctc 528  
 Ser Leu Phe Leu Leu Lys Arg Leu Pro Phe Cys His Ser His Leu Leu 175  
 165 170

tct cgc tcc tat tgc ctc cac cag gat atg atc cgc ctg gtc tgt gct 576  
 Ser Arg Ser Tyr Cys Leu His Gln Asp Met Ile Arg Leu Val Cys Ala 190  
 180 185

gac atc agg ctc aac agc tgg tat gga ttt gct ctt gcc ttg ctc att 624  
 Asp Ile Arg Leu Asn Ser Trp Tyr Gly Phe Ala Leu Ala Leu Ile 205  
 195 200

att atc gtg gat cct ctg ctc att gtg atc tcc tat aca ctt att ctg 672  
 Ile Ile Val Asp Pro Leu Leu Ile Val Ile Ser Tyr Thr Leu Ile Leu 220  
 210 215

aaa aat atc ttg ggc aca gcc acc tgg gct gag cga ctc cgt gcc ctc 720  
 Lys Asn Ile Leu Gly Thr Ala Thr Trp Ala Glu Arg Leu Arg Ala Leu



225                      230                      235                      240  
 aat aac tgc ctg tcc cac att cta gct gtc ctg gtc ctc tac att ccc      768  
 Asn Asn Cys Leu Ser His Ile Leu Ala Val Leu Val Leu Tyr Ile Pro  
                                  245                                   250                                   255  
 atg gtt ggt gta tct atg act cat cgc ttt gcc aag cat gcc tct cca      816  
 Met Val Gly Val Ser Met Thr His Arg Phe Ala Lys His Ala Ser Pro  
                                  260                                   265                                   270  
 ctg gtc cat gtt atc atg gcc aat atc tac ctg ctg gca ccc ccg gtg      864  
 Leu Val His Val Ile Met Ala Asn Ile Tyr Leu Leu Ala Pro Pro Val  
                                  275                                   280                                   285  
 atg aac ccc atc att tac agt gta aag aac aag cag atc caa tgg gga      912  
 Met Asn Pro Ile Ile Tyr Ser Val Lys Asn Lys Gln Ile Gln Trp Gly  
                                  290                                   295                                   300  
 atg tta aat ttc ctt tcc ctc aaa aat atg cat tca aga tga      954  
 Met Leu Asn Phe Leu Ser Leu Lys Asn Met His Ser Arg  
 305                                   310                                   315  
  
 <210> 420  
 <211> 317  
 <212> PRT  
 <213> Homo Sapiens  
  
 <400> 420  
 Met Ser Gln Val Thr Asn Thr Thr Gln Glu Gly Ile Tyr Phe Ile Leu  
 1                                   5                                   10                                   15  
  
 Thr Asp Ile Pro Gly Phe Glu Ala Ser His Ile Trp Ile Ser Ile Pro  
                                  20                                   25                                   30  
  
 Val Cys Cys Leu Tyr Thr Ile Ser Ile Met Gly Asn Thr Thr Ile Leu  
                                  35                                   40                                   45  
  
 Thr Val Ile Arg Thr Glu Pro Ser Val His Gln Arg Met Tyr Leu Phe  
                                  50                                   55                                   60  
  
 Leu Ser Met Leu Ala Leu Thr Asp Leu Gly Leu Thr Leu Thr Thr Leu  
 65                                   70                                   75                                   80  
  
 Pro Thr Val Met Gln Leu Leu Trp Phe Asn Val Arg Arg Ile Ser Ser  
                                  85                                   90                                   95  
  
 Glu Ala Cys Phe Ala Gln Phe Phe Phe Leu His Gly Phe Ser Phe Met  
                                  100                                   105                                   110  
  
 Glu Ser Ser Val Leu Leu Ala Met Ser Val Asp Cys Tyr Val Ala Ile  
                                  115                                   120                                   125

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Cys Cys Pro Leu His Tyr Ala Ser Ile Leu Thr Asn Glu Val Ile Gly  
 130 135 140

Arg Thr Gly Leu Ala Ile Ile Cys Cys Cys Val Leu Ala Val Leu Pro  
 145 150 155 160

Ser Leu Phe Leu Leu Lys Arg Leu Pro Phe Cys His Ser His Leu Leu  
 165 170 175

Ser Arg Ser Tyr Cys Leu His Gln Asp Met Ile Arg Leu Val Cys Ala  
 180 185 190

Asp Ile Arg Leu Asn Ser Trp Tyr Gly Phe Ala Leu Ala Leu Ile  
 195 200 205

Ile Ile Val Asp Pro Leu Leu Ile Val Ile Ser Tyr Thr Leu Ile Leu  
 210 215 220

Lys Asn Ile Leu Gly Thr Ala Thr Trp Ala Glu Arg Leu Arg Ala Leu  
 225 230 235 240

Asn Asn Cys Leu Ser His Ile Leu Ala Val Leu Val Leu Tyr Ile Pro  
 245 250 255

Met Val Gly Val Ser Met Thr His Arg Phe Ala Lys His Ala Ser Pro  
 260 265 270

Leu Val His Val Ile Met Ala Asn Ile Tyr Leu Leu Ala Pro Pro Val  
 275 280 285

Met Asn Pro Ile Ile Tyr Ser Val Lys Asn Lys Gln Ile Gln Trp Gly  
 290 295 300

Met Leu Asn Phe Leu Ser Leu Lys Asn Met His Ser Arg  
 305 310 315

<210> 421  
 <211> 966  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (963)  
 <223>

<400> 421

atg cta aca ctg aat aaa aca gac cta ata cca gct tca ttt att ctg	48
Met Leu Thr Leu Asn Lys Thr Asp Leu Ile Pro Ala Ser Phe Ile Leu	
1 5 10 15	
aat gga gtc cca gga ctg gaa gac aca caa ctc tgg att tcc ttc cca	96
Asn Gly Val Pro Gly Leu Glu Asp Thr Gln Leu Trp Ile Ser Phe Pro	
20 25 30	
ttc tgc tct atg tat gtt gtg gct atg gta ggg aat tgt gga ctc ctc	144
Phe Cys Ser Met Tyr Val Val Ala Met Val Gly Asn Cys Gly Leu Leu	
35 40 45	
tac ctc att cac tat gag gat gcc ctg cac aaa ccc atg tac tac ttc	192
Tyr Leu Ile His Tyr Glu Asp Ala Leu His Lys Pro Met Tyr Tyr Phe	
50 55 60	
ttg gcc atg ctt tcc ttt act gac ctt gtt atg tgc tct agt aca atc	240
Leu Ala Met Leu Ser Phe Thr Asp Leu Val Met Cys Ser Ser Thr Ile	
65 70 75 80	
cct aaa gcc ctc tgc atc ttc tgg ttt cat ctc aag gac att gga ttt	288
Pro Lys Ala Leu Cys Ile Phe Trp Phe His Leu Lys Asp Ile Gly Phe	
85 90 95	
gat gaa tgc ctt gtc cag atg ttc ttc atc cac acc ttc aca ggg atg	336
Asp Glu Cys Leu Val Gln Met Phe Phe Ile His Thr Phe Thr Gly Met	
100 105 110	
gag tct ggg gtg ctt atg ctt atg gcc ctg gat cgc tat gtg gcc atc	384
Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp Arg Tyr Val Ala Ile	
115 120 125	
tgc tac ccc tta cgc tat tca act atc ctc acc aat cct gta att gca	432
Cys Tyr Pro Leu Arg Tyr Ser Thr Ile Leu Thr Asn Pro Val Ile Ala	
130 135 140	
aag gtt ggg act gcc acc ttc ctg aga ggg gta tta ctc att att ccc	480
Lys Val Gly Thr Ala Thr Phe Leu Arg Gly Val Leu Leu Ile Ile Pro	
145 150 155 160	
ttt act ttc ctc acc aag cgc ctg ccc tac tgc aga ggc aat ata ctt	528
Phe Thr Phe Leu Thr Lys Arg Leu Pro Tyr Cys Arg Gly Asn Ile Leu	
165 170 175	
ccc cat acc tac tgt gac cac atg tct gta gcc aaa ttg tcc tgt ggt	576
Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Leu Ser Cys Gly	
180 185 190	
aat gtc aag gtc aat gcc atc tat ggt ctg atg gtt gcc ctc ctg att	624
Asn Val Lys Val Asn Ala Ile Tyr Gly Leu Met Val Ala Leu Leu Ile	
195 200 205	
ggg ggc ttt gac ata ctg tgt atc acc atc tcc tat acc atg att ctc	672
Gly Gly Phe Asp Ile Leu Cys Ile Thr Ile Ser Tyr Thr Met Ile Leu	
210 215 220	
cgg gca gtg gtc agc ctc tcc tca gca gat gct cgg cag aag gcc ttt	720
Arg Ala Val Val Ser Leu Ser Ser Ala Asp Ala Arg Gln Lys Ala Phe	
225 230 235 240	
aat acc tgc act gcc cac att tgt gcc att gtt ttc tcc tat act cca	768

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Asn Thr Cys Thr Ala His Ile Cys Ala Ile Val Phe Ser Tyr Thr Pro  
 245 250 255

gct ttc ttc tcc ttc ttt tcc cac cgc ttt ggg gaa cac ata atc ccc 816  
 Ala Phe Phe Ser Phe Phe Ser His Arg Phe Gly Glu His Ile Ile Pro  
 260 265 270

cct tct tgc cac atc att gta gcc aat att tat ctg ctc cta cca ccc 864  
 Pro Ser Cys His Ile Ile Val Ala Asn Ile Tyr Leu Leu Leu Pro Pro  
 275 280 285

act atg aac cct att gtc tat ggg gtg aaa acc aaa cag ata cga gac 912  
 Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Asp  
 290 295 300

tgt gtc ata agg atc ctt tca ggt tct aag gat acc aaa tcc tac agc 960  
 Cys Val Ile Arg Ile Leu Ser Gly Ser Lys Asp Thr Lys Ser Tyr Ser  
 305 310 315 320

atg tga 966  
 Met

<210> 422  
 <211> 321  
 <212> PRT  
 <213> Homo Sapiens

<400> 422

Met Leu Thr Leu Asn Lys Thr Asp Leu Ile Pro Ala Ser Phe Ile Leu  
 1 5 10 15

Asn Gly Val Pro Gly Leu Glu Asp Thr Gln Leu Trp Ile Ser Phe Pro  
 20 25 30

Phe Cys Ser Met Tyr Val Val Ala Met Val Gly Asn Cys Gly Leu Leu  
 35 40 45

Tyr Leu Ile His Tyr Glu Asp Ala Leu His Lys Pro Met Tyr Tyr Phe  
 50 55 60

Leu Ala Met Leu Ser Phe Thr Asp Leu Val Met Cys Ser Ser Thr Ile  
 65 70 75 80

Pro Lys Ala Leu Cys Ile Phe Trp Phe His Leu Lys Asp Ile Gly Phe  
 85 90 95

Asp Glu Cys Leu Val Gln Met Phe Phe Ile His Thr Phe Thr Gly Met  
 100 105 110

Glu Ser Gly Val Leu Met Leu Met Ala Leu Asp Arg Tyr Val Ala Ile  
 115 120 125

Cys Tyr Pro Leu Arg Tyr Ser Thr Ile Leu Thr Asn Pro Val Ile Ala  
130 135 140

Lys Val Gly Thr Ala Thr Phe Leu Arg Gly Val Leu Leu Ile Ile Pro  
145 150 155 160

Phe Thr Phe Leu Thr Lys Arg Leu Pro Tyr Cys Arg Gly Asn Ile Leu  
165 170 175

Pro His Thr Tyr Cys Asp His Met Ser Val Ala Lys Leu Ser Cys Gly  
180 185 190

Asn Val Lys Val Asn Ala Ile Tyr Gly Leu Met Val Ala Leu Leu Ile  
195 200 205

Gly Gly Phe Asp Ile Leu Cys Ile Thr Ile Ser Tyr Thr Met Ile Leu  
210 215 220

Arg Ala Val Val Ser Leu Ser Ser Ala Asp Ala Arg Gln Lys Ala Phe  
225 230 235 240

Asn Thr Cys Thr Ala His Ile Cys Ala Ile Val Phe Ser Tyr Thr Pro  
245 250 255

Ala Phe Phe Ser Phe Phe Ser His Arg Phe Gly Glu His Ile Ile Pro  
260 265 270

Pro Ser Cys His Ile Ile Val Ala Asn Ile Tyr Leu Leu Leu Pro Pro  
275 280 285

Thr Met Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Asp  
290 295 300

Cys Val Ile Arg Ile Leu Ser Gly Ser Lys Asp Thr Lys Ser Tyr Ser  
305 310 315 320

Met

<210> 423  
<211> 966  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS

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&lt;222&gt; (1) .. (963)

&lt;223&gt;

<400> 423  
 atg gaa tct cct aat cac act gat gtt gac cct tct gtc ttc ttc ctc 48  
 Met Glu Ser Pro Asn His Thr Asp Val Asp Pro Ser Val Phe Phe Leu  
 1 5 10 15  
 ctg ggc atc cca ggt ctg gaa caa ttt cat ttg tgg ctc tca ctc cct 96  
 Leu Gly Ile Pro Gly Leu Glu Gln Phe His Leu Trp Leu Ser Leu Pro  
 20 25 30  
 gtg tgt ggc tta ggc aca gcc aca att gtg ggc aat ata act att ctg 144  
 Val Cys Gly Leu Gly Thr Ala Thr Ile Val Gly Asn Ile Thr Ile Leu  
 35 40 45  
 gtt gtt gtt gcc act gaa cca gtc ttg cac aag cct gtg tac ctt ttt 192  
 Val Val Val Ala Thr Glu Pro Val Leu His Lys Pro Val Tyr Leu Phe  
 50 55 60  
 ctg tgc atg ctc tca acc atc gac ttg gct gcc tct gtc tcc aca gtt 240  
 Leu Cys Met Leu Ser Thr Ile Asp Leu Ala Ala Ser Val Ser Thr Val  
 65 70 75 80  
 ccc aag cta ctg gct atc ttc tgg tgt gga gcc gga cat ata tct gcc 288  
 Pro Lys Leu Leu Ala Ile Phe Trp Cys Gly Ala Gly His Ile Ser Ala  
 85 90 95  
 tct gcc tgc ctg gca cag atg ttc ttc att cat gcc ttc tgc atg atg 336  
 Ser Ala Cys Leu Ala Gln Met Phe Phe Ile His Ala Phe Cys Met Met  
 100 105 110  
 gag tcc act gtg cta ctg gcc atg gcc ttt gat cgc tac gtg gcc atc 384  
 Glu Ser Thr Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125  
 tgc cac cca ctc cgc tat gcc aca atc ctc act gac acc atc att gcc 432  
 Cys His Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asp Thr Ile Ile Ala  
 130 135 140  
 cac ata ggg gtg gca gct gta gtg cga ggc tcc ctg ctc atg ctc cca 480  
 His Ile Gly Val Ala Val Val Arg Gly Ser Leu Leu Met Leu Pro  
 145 150 155 160  
 tgt ccc ttc ctt att ggg cgt ttg aac ttc tgc caa agc cat gtg atc 528  
 Cys Pro Phe Leu Ile Gly Arg Leu Asn Phe Cys Gln Ser His Val Ile  
 165 170 175  
 cta cac acg tac tgt gag cac atg gct gtg gtg aag ctg gcc tgt gga 576  
 Leu His Thr Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Gly  
 180 185 190  
 gac acc agg cct aac cgt gtg tat ggg ctg aca gct gca ctg ttg gtc 624  
 Asp Thr Arg Pro Asn Arg Val Tyr Gly Leu Thr Ala Ala Leu Leu Val  
 195 200 205  
 att ggg gtt gac ttg ttt tgc att ggt ctc tcc tat gcc cta agt gca 672  
 Ile Gly Val Asp Leu Phe Cys Ile Gly Leu Ser Tyr Ala Leu Ser Ala  
 210 215 220

caa gct gtc ctt cgc ctc tca tcc cat gaa gct cgg tcc aag gcc cta 720  
 Gln Ala Val Leu Arg Leu Ser Ser His Glu Ala Arg Ser Lys Ala Leu  
 225 230 235 240  
 ggg acc tgt ggt tcc cat gtc tgt gtc atc ctc atc tct tat aca cca 768  
 Gly Thr Cys Gly Ser His Val Cys Val Ile Leu Ile Ser Tyr Thr Pro  
 245 250 255  
 gcc ctc ttc tcc ttt ttt aca cac cgc ttt ggc cat cac gtt cca gtc 816  
 Ala Leu Phe Ser Phe Phe Thr His Arg Phe Gly His His Val Pro Val  
 260 265 270  
 cat att cac att ctt ttg gcc aat gtt tat ctg ctt ttg cca cct gct 864  
 His Ile His Ile Leu Leu Ala Asn Val Tyr Leu Leu Leu Pro Pro Ala  
 275 280 285  
 ctt aat cct gtg gta tat gga gtt aag acc aaa cag atc cgt aaa aga 912  
 Leu Asn Pro Val Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Lys Arg  
 290 295 300  
 gtt gtc agg gtg ttt caa agt ggg cag gga atg ggc atc aag gca tct 960  
 Val Val Arg Val Phe Gln Ser Gly Gln Gly Met Gly Ile Lys Ala Ser  
 305 310 315 320  
 gag tga 966  
 Glu

<210> 424  
 <211> 321  
 <212> PRT  
 <213> Homo Sapiens

<400> 424

Met Glu Ser Pro Asn His Thr Asp Val Asp Pro Ser Val Phe Phe Leu  
 1 5 10 15  
 Leu Gly Ile Pro Gly Leu Glu Gln Phe His Leu Trp Leu Ser Leu Pro  
 20 25 30  
 Val Cys Gly Leu Gly Thr Ala Thr Ile Val Gly Asn Ile Thr Ile Leu  
 35 40 45  
 Val Val Val Ala Thr Glu Pro Val Leu His Lys Pro Val Tyr Leu Phe  
 50 55 60  
 Leu Cys Met Leu Ser Thr Ile Asp Leu Ala Ala Ser Val Ser Thr Val  
 65 70 75 80  
 Pro Lys Leu Leu Ala Ile Phe Trp Cys Gly Ala Gly His Ile Ser Ala  
 85 90 95  
 Ser Ala Cys Leu Ala Gln Met Phe Phe Ile His Ala Phe Cys Met Met

100 105 110  
 Glu Ser Thr Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125  
 Cys His Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asp Thr Ile Ile Ala  
 130 135 140  
 His Ile Gly Val Ala Ala Val Val Arg Gly Ser Leu Leu Met Leu Pro  
 145 150 155 160  
 Cys Pro Phe Leu Ile Gly Arg Leu Asn Phe Cys Gln Ser His Val Ile  
 165 170 175  
 Leu His Thr Tyr Cys Glu His Met Ala Val Val Lys Leu Ala Cys Gly  
 180 185 190  
 Asp Thr Arg Pro Asn Arg Val Tyr Gly Leu Thr Ala Ala Leu Leu Val  
 195 200 205  
 Ile Gly Val Asp Leu Phe Cys Ile Gly Leu Ser Tyr Ala Leu Ser Ala  
 210 215 220  
 Gln Ala Val Leu Arg Leu Ser Ser His Glu Ala Arg Ser Lys Ala Leu  
 225 230 235 240  
 Gly Thr Cys Gly Ser His Val Cys Val Ile Leu Ile Ser Tyr Thr Pro  
 245 250 255  
 Ala Leu Phe Ser Phe Phe Thr His Arg Phe Gly His His Val Pro Val  
 260 265 270  
 His Ile His Ile Leu Leu Ala Asn Val Tyr Leu Leu Leu Pro Pro Ala  
 275 280 285  
 Leu Asn Pro Val Val Tyr Gly Val Lys Thr Lys Gln Ile Arg Lys Arg  
 290 295 300  
 Val Val Arg Val Phe Gln Ser Gly Gln Gly Met Gly Ile Lys Ala Ser  
 305 310 315 320  
 Glu

<210> 425  
 <211> 975



<212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(972)  
 <223>

<400> 425  
 atg aat cat atg tct gca tct ctc aaa atc tcc aat agc tcc aaa ttc 48  
 Met Asn His Met Ser Ala Ser Leu Lys Ile Ser Asn Ser Ser Lys Phe  
 1 5 10 15

cag gtc tct gag ttc atc ctg ctg gga ttc ccg ggc att cac agc tgg 96  
 Gln Val Ser Glu Phe Ile Leu Leu Gly Phe Pro Gly Ile His Ser Trp  
 20 25 30

caa cac tgg cta tct ctg ccc ctg gca cta ctg tat ctc tca gca ctt 144  
 Gln His Trp Leu Ser Leu Pro Leu Ala Leu Leu Tyr Leu Ser Ala Leu  
 35 40 45

gct gca aac acc ctc atc ctc atc atc atc tgg cag aac cct tct tta 192  
 Ala Ala Asn Thr Leu Ile Leu Ile Ile Ile Trp Gln Asn Pro Ser Leu  
 50 55 60

cag cag ccc atg tat att ttc ctt ggc atc ctc tgt atg gta gac atg 240  
 Gln Gln Pro Met Tyr Ile Phe Leu Gly Ile Leu Cys Met Val Asp Met  
 65 70 75 80

ggt ctg gcc act act atc atc cct aag atc ctg gcc atc ttc tgg ttt 288  
 Gly Leu Ala Thr Thr Ile Ile Pro Lys Ile Leu Ala Ile Phe Trp Phe  
 85 90 95

gat gcc aag gtt att agc ctc cct gag tgc ttt gct cag att tat gcc 336  
 Asp Ala Lys Val Ile Ser Leu Pro Glu Cys Phe Ala Gln Ile Tyr Ala  
 100 105 110

att cac ttc ttt gtg ggc atg gag tct ggt atc cta ctc tgc atg gct 384  
 Ile His Phe Phe Val Gly Met Glu Ser Gly Ile Leu Leu Cys Met Ala  
 115 120 125

ttt gat aga tat gtg gct att tgt cac cct ctt cgc tat cca tca att 432  
 Phe Asp Arg Tyr Val Ala Ile Cys His Pro Leu Arg Tyr Pro Ser Ile  
 130 135 140

gtc acc agt tcc tta atc tta aaa gct acc ctg ttc atg gtg ctg aga 480  
 Val Thr Ser Ser Leu Ile Leu Lys Ala Thr Leu Phe Met Val Leu Arg  
 145 150 155 160

aat ggc tta ttt gtc act cca gtg cct gtg ctt gca gca cag cgt gat 528  
 Asn Gly Leu Phe Val Thr Pro Val Pro Val Leu Ala Ala Gln Arg Asp  
 165 170 175

tat tgc tcc aag aat gaa att gaa cac tgc ctg tgc tct aac ctt ggg 576  
 Tyr Cys Ser Lys Asn Glu Ile Glu His Cys Leu Cys Ser Asn Leu Gly  
 180 185 190

gtc aca agc ctg gct tgt gat gac agg agg cca aac agc att tgc cag 624  
 Val Thr Ser Leu Ala Cys Asp Asp Arg Arg Pro Asn Ser Ile Cys Gln  
 195 200 205

ttg gtt ctg gca tgg ctt gga atg ggg agt gat cta agt ctt att ata 672  
 Leu Val Leu Ala Trp Leu Gly Met Gly Ser Asp Leu Ser Leu Ile Ile  
 210 215 220  
 ctg tca tat att ttg att ctg tac tct gta ctt aga ctg aac tca gct 720  
 Leu Ser Tyr Ile Leu Ile Leu Tyr Ser Val Leu Arg Leu Asn Ser Ala  
 225 230 235 240  
 gaa gct gca gcc aag gcc ctg agc act tgt agt tca cat ctc acc ctc 768  
 Glu Ala Ala Ala Lys Ala Leu Ser Thr Cys Ser Ser His Leu Thr Leu  
 245 250 255  
 atc ctt ttc ttt tac act att gtt gta gtg att tca gtg act cat ctg 816  
 Ile Leu Phe Phe Tyr Thr Ile Val Val Val Ile Ser Val Thr His Leu  
 260 265 270  
 aca gag atg aag gct act ttg att cca gtt cta ctt aat gtg ttg cac 864  
 Thr Glu Met Lys Ala Thr Leu Ile Pro Val Leu Leu Asn Val Leu His  
 275 280 285  
 aac atc atc ccc cct tcc ctc aac cct aca gtt tat gca ctt cag acc 912  
 Asn Ile Ile Pro Pro Ser Leu Asn Pro Thr Val Tyr Ala Leu Gln Thr  
 290 295 300  
 aaa gaa ctt agg gca gcc ttc caa aag gtg ctg ttt gcc ctt aca aaa 960  
 Lys Glu Leu Arg Ala Ala Phe Gln Lys Val Leu Phe Ala Leu Thr Lys  
 305 310 315 320  
 gaa ata aga tct tag 975  
 Glu Ile Arg Ser

<210> 426  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 426

Met Asn His Met Ser Ala Ser Leu Lys Ile Ser Asn Ser Ser Lys Phe  
 1 5 10 15

Gln Val Ser Glu Phe Ile Leu Leu Gly Phe Pro Gly Ile His Ser Trp  
 20 25 30

Gln His Trp Leu Ser Leu Pro Leu Ala Leu Leu Tyr Leu Ser Ala Leu  
 35 40 45

Ala Ala Asn Thr Leu Ile Leu Ile Ile Ile Trp Gln Asn Pro Ser Leu  
 50 55 60

Gln Gln Pro Met Tyr Ile Phe Leu Gly Ile Leu Cys Met Val Asp Met  
 65 70 75 80

Glu Ile Arg Ser

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<210> 427  
 <211> 900  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (897)  
 <223>

<400> 427  
 atg gga ttc cct ggc att cac agt tgg cag cac tgg ctc tcc ctg ccc 48  
 Met Gly Phe Pro Gly Ile His Ser Trp Gln His Trp Leu Ser Leu Pro  
 1 5 10 15  
 ctg gct ctg ctc tac ctc tta gct ctc agt gcc aac atc ctt atc ctg 96  
 Leu Ala Leu Leu Tyr Leu Leu Ala Leu Ser Ala Asn Ile Leu Ile Leu  
 20 25 30  
 atc atc atc aac aaa gag gca gca ctg cac cag cct atg tac tat ttc 144  
 Ile Ile Ile Asn Lys Glu Ala Ala Leu His Gln Pro Met Tyr Tyr Phe  
 35 40 45  
 ctg ggc atc ttg gct atg gca gac ata ggc ctg gct acc acc atc atg 192  
 Leu Gly Ile Leu Ala Met Ala Asp Ile Gly Leu Ala Thr Thr Ile Met  
 50 55 60  
 cct aag att ttg gcc atc tta tgg ttc aat gct aag acc atc agt ctc 240  
 Pro Lys Ile Leu Ala Ile Leu Trp Phe Asn Ala Lys Thr Ile Ser Leu  
 65 70 75 80  
 ctg gag tgc ttt gct cag atg tat gcc ata cat tgc ttt gtg gcc atg 288  
 Leu Glu Cys Phe Ala Gln Met Tyr Ala Ile His Cys Phe Val Ala Met  
 85 90 95  
 gaa tca agt acc ttt gtc tgc atg gct att gat aga tat gta gcc att 336  
 Glu Ser Ser Thr Phe Val Cys Met Ala Ile Asp Arg Tyr Val Ala Ile  
 100 105 110  
 tgt cga ccg cta cga tat cca tca atc atc act gaa tct ttt gtt ttc 384  
 Cys Arg Pro Leu Arg Tyr Pro Ser Ile Ile Thr Glu Ser Phe Val Phe  
 115 120 125  
 aaa gca aat ggg ttc atg gca ctg aga aac agc ctg tgt ctc atc tca 432  
 Lys Ala Asn Gly Phe Met Ala Leu Arg Asn Ser Leu Cys Leu Ile Ser  
 130 135 140  
 gtg cct ctg ttg gct gcc cag agg cat tac tgc tcc cag aat caa att 480  
 Val Pro Leu Leu Ala Gln Arg His Tyr Cys Ser Gln Asn Gln Ile  
 145 150 155 160  
 gag cac tgt ctt tgt tct aac ctt gga gtc act agc cta tct tgt gat 528  
 Glu His Cys Leu Cys Ser Asn Leu Gly Val Thr Ser Leu Ser Cys Asp  
 165 170 175  
 gat cga aga atc aat agc att aac cag gtc ctt ttg gct tgg aca ctc 576  
 Asp Arg Arg Ile Asn Ser Ile Asn Gln Val Leu Leu Ala Trp Thr Leu

180	185	190	
atg gga agt gac ctg ggt ttg att att tta tca tat gct cta ata ctt			624
Met Gly Ser Asp Leu Gly Leu Ile Ile Leu Ser Tyr Ala Leu Ile Leu			
195	200	205	
tac tct gtc ctg aag ctg aac tct cca gaa gct gca tcc aag gcc tta			672
Tyr Ser Val Leu Lys Leu Asn Ser Pro Glu Ala Ala Ser Lys Ala Leu			
210	215	220	
agt acc tgc acc tcc cac ctc atc tta atc ctt ttc ttc tac aca gtc			720
Ser Thr Cys Thr Ser His Leu Ile Leu Ile Leu Phe Phe Tyr Thr Val			
225	230	235	240
atc att gtg att tcc att act cgt agt aca gga atg aga gtt ccc ctt			768
Ile Ile Val Ile Ser Ile Thr Arg Ser Thr Gly Met Arg Val Pro Leu			
245	250	255	
att cca gtt cta ctt aat gtg cta cac aat gtc att ccc cct gcc ctg			816
Ile Pro Val Leu Leu Asn Val Leu His Asn Val Ile Pro Pro Ala Leu			
260	265	270	
aac ccc atg gta tat gca ctc aag aac aag gaa ctc agg caa ggc tta			864
Asn Pro Met Val Tyr Ala Leu Lys Asn Lys Glu Leu Arg Gln Gly Leu			
275	280	285	
tac aag gta ctt aga ctg gga gtg aag ggc acc tga			900
Tyr Lys Val Leu Arg Leu Gly Val Lys Gly Thr			
290	295		

&lt;210&gt; 428

&lt;211&gt; 299

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 428

Met Gly Phe Pro Gly Ile His Ser Trp Gln His Trp Leu Ser Leu Pro
1 5 10 15

Leu Ala Leu Leu Tyr Leu Leu Ala Leu Ser Ala Asn Ile Leu Ile Leu
20 25 30

Ile Ile Ile Asn Lys Glu Ala Ala Leu His Gln Pro Met Tyr Tyr Phe
35 40 45

Leu Gly Ile Leu Ala Met Ala Asp Ile Gly Leu Ala Thr Thr Ile Met
50 55 60

Pro Lys Ile Leu Ala Ile Leu Trp Phe Asn Ala Lys Thr Ile Ser Leu
65 70 75 80

Leu Glu Cys Phe Ala Gln Met Tyr Ala Ile His Cys Phe Val Ala Met
85 90 95

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Glu Ser Ser Thr Phe Val Cys Met Ala Ile Asp Arg Tyr Val Ala Ile  
 100 105 110

Cys Arg Pro Leu Arg Tyr Pro Ser Ile Ile Thr Glu Ser Phe Val Phe  
 115 120 125

Lys Ala Asn Gly Phe Met Ala Leu Arg Asn Ser Leu Cys Leu Ile Ser  
 130 135 140

Val Pro Leu Leu Ala Ala Gln Arg His Tyr Cys Ser Gln Asn Gln Ile  
 145 150 155 160

Glu His Cys Leu Cys Ser Asn Leu Gly Val Thr Ser Leu Ser Cys Asp  
 165 170 175

Asp Arg Arg Ile Asn Ser Ile Asn Gln Val Leu Leu Ala Trp Thr Leu  
 180 185 190

Met Gly Ser Asp Leu Gly Leu Ile Ile Leu Ser Tyr Ala Leu Ile Leu  
 195 200 205

Tyr Ser Val Leu Lys Leu Asn Ser Pro Glu Ala Ala Ser Lys Ala Leu  
 210 215 220

Ser Thr Cys Thr Ser His Leu Ile Leu Ile Leu Phe Phe Tyr Thr Val  
 225 230 235 240

Ile Ile Val Ile Ser Ile Thr Arg Ser Thr Gly Met Arg Val Pro Leu  
 245 250 255

Ile Pro Val Leu Leu Asn Val Leu His Asn Val Ile Pro Pro Ala Leu  
 260 265 270

Asn Pro Met Val Tyr Ala Leu Lys Asn Lys Glu Leu Arg Gln Gly Leu  
 275 280 285

Tyr Lys Val Leu Arg Leu Gly Val Lys Gly Thr  
 290 295

<210> 429  
 <211> 978  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (975)

&lt;223&gt;

&lt;400&gt; 429

atg ttc ctt ccc aat gac acc cag ttt cac ccc tcc tcc ttc ctg ttg	48
Met Phe Leu Pro Asn Asp Thr Gln Phe His Pro Ser Ser Phe Leu Leu	
1 5 10 15	
ctg ggg atc cca gga cta gaa aca ctt cac atc tgg atc ggc ttt ccc	96
Leu Gly Ile Pro Gly Leu Glu Thr Leu His Ile Trp Ile Gly Phe Pro	
20 25 30	
ttc tgt gct gtg tac atg atc gca ctc ata ggg aac ttc act att cta	144
Phe Cys Ala Val Tyr Met Ile Ala Leu Ile Gly Asn Phe Thr Ile Leu	
35 40 45	
ctt gtg atc aag act gac agc agc cta cac cag ccc atg ttc tac ttc	192
Leu Val Ile Lys Thr Asp Ser Ser Leu His Gln Pro Met Phe Tyr Phe	
50 55 60	
ctg gcc atg ttg gcc acc act gat gtg ggt ctc tca aca gct acc atc	240
Leu Ala Met Leu Ala Thr Asp Val Gly Leu Ser Thr Ala Thr Ile	
65 70 75 80	
cct aag atg ctt gga atc ttc tgg atc aac ctc aga ggg atc atc ttt	288
Pro Lys Met Leu Gly Ile Phe Trp Ile Asn Leu Arg Gly Ile Ile Phe	
85 90 95	
gaa gcc tgc ctc acc cag atg ttt ttt atc cac aac ttc aca ctt atg	336
Glu Ala Cys Leu Thr Gln Met Phe Phe Ile His Asn Phe Thr Leu Met	
100 105 110	
gag tca gca gtc ctt gtg gca atg gct tat gac agc tat gtg gcc atc	384
Glu Ser Ala Val Leu Val Ala Met Ala Tyr Asp Ser Tyr Val Ala Ile	
115 120 125	
tgc aat cca ctc caa tat agc gcc atc ctc acc aac aag gtt gtt tct	432
Cys Asn Pro Leu Gln Tyr Ser Ala Ile Leu Thr Asn Lys Val Val Ser	
130 135 140	
gtg att ggt ctt ggt gtg ttt gtg agg gct tta att ttc gtc att ccc	480
Val Ile Gly Leu Gly Val Phe Val Arg Ala Leu Ile Phe Val Ile Pro	
145 150 155 160	
tct ata ctt ctt ata ttg cgg ttg ccc ttc tgt ggg aat cat gta att	528
Ser Ile Leu Leu Ile Leu Arg Leu Pro Phe Cys Gly Asn His Val Ile	
165 170 175	
ccc cac acc tac tgt gag cac atg ggt ctt gct cat cta tct tgt gcc	576
Pro His Thr Tyr Cys Glu His Met Gly Leu Ala His Leu Ser Cys Ala	
180 185 190	
agc atc aaa atc aat att att tat ggt tta tgt gcc att tgt aat ctg	624
Ser Ile Lys Ile Asn Ile Ile Tyr Gly Leu Cys Ala Ile Cys Asn Leu	
195 200 205	
gtg ttt gac atc aca gtc att gcc ctc tct tat gtg cat att ctt tgt	672
Val Phe Asp Ile Thr Val Ile Ala Leu Ser Tyr Val His Ile Leu Cys	
210 215 220	
gct gtt ttc cgt ctt cct act cat gag ccc cga ctc aag tcc ctc agc	720

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Ala Val Phe Arg Leu Pro Thr His Glu Pro Arg Leu Lys Ser Leu Ser  
 225 230 235 240

aca tgt ggt tca cat gtg tgt gta atc ctt gcc ttc tat aca cca gcc 768  
 Thr Cys Gly Ser His Val Cys Val Ile Leu Ala Phe Tyr Thr Pro Ala  
 245 250 255

ctc ttt tcc ttt atg act cat tgc ttt gcc cga aat gtg ccc cgc tat 816  
 Leu Phe Ser Phe Met Thr His Cys Phe Gly Arg Asn Val Pro Arg Tyr  
 260 265 270

atc cat ata ctc cta gcc aat ctc tat gtt gtg gtg cca cca atg ctc 864  
 Ile His Ile Leu Leu Ala Asn Leu Tyr Val Val Val Pro Pro Met Leu  
 275 280 285

aat cct gtc ata tat gga gtc aga acc aag cag atc tat aaa tgt gta 912  
 Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile Tyr Lys Cys Val  
 290 295 300

aag aaa ata tta ttg cag gaa caa gga atg gaa aag gaa gag tac cta 960  
 Lys Lys Ile Leu Leu Glu Gln Gly Met Glu Lys Glu Glu Tyr Leu  
 305 310 315 320

ata cat acg agg ttc tga 978  
 Ile His Thr Arg Phe  
 325

<210> 430  
 <211> 325  
 <212> PRT  
 <213> Homo Sapiens

<400> 430

Met Phe Leu Pro Asn Asp Thr Gln Phe His Pro Ser Ser Phe Leu Leu  
 1 5 10 15

Leu Gly Ile Pro Gly Leu Glu Thr Leu His Ile Trp Ile Gly Phe Pro  
 20 25 30

Phe Cys Ala Val Tyr Met Ile Ala Leu Ile Gly Asn Phe Thr Ile Leu  
 35 40 45

Leu Val Ile Lys Thr Asp Ser Ser Leu His Gln Pro Met Phe Tyr Phe  
 50 55 60

Leu Ala Met Leu Ala Thr Thr Asp Val Gly Leu Ser Thr Ala Thr Ile  
 65 70 75 80

Pro Lys Met Leu Gly Ile Phe Trp Ile Asn Leu Arg Gly Ile Ile Phe  
 85 90 95

Glu Ala Cys Leu Thr Gln Met Phe Phe Ile His Asn Phe Thr Leu Met  
 100 105 110



Glu Ser Ala Val Leu Val Ala Met Ala Tyr Asp Ser Tyr Val Ala Ile  
 115 120 125

Cys Asn Pro Leu Gln Tyr Ser Ala Ile Leu Thr Asn Lys Val Val Ser  
 130 135 140

Val Ile Gly Leu Gly Val Phe Val Arg Ala Leu Ile Phe Val Ile Pro  
 145 150 155 160

Ser Ile Leu Leu Ile Leu Arg Leu Pro Phe Cys Gly Asn His Val Ile  
 165 170 175

Pro His Thr Tyr Cys Glu His Met Gly Leu Ala His Leu Ser Cys Ala  
 180 185 190

Ser Ile Lys Ile Asn Ile Ile Tyr Gly Leu Cys Ala Ile Cys Asn Leu  
 195 200 205

Val Phe Asp Ile Thr Val Ile Ala Leu Ser Tyr Val His Ile Leu Cys  
 210 215 220

Ala Val Phe Arg Leu Pro Thr His Glu Pro Arg Leu Lys Ser Leu Ser  
 225 230 235 240

Thr Cys Gly Ser His Val Cys Val Ile Leu Ala Phe Tyr Thr Pro Ala  
 245 250 255

Leu Phe Ser Phe Met Thr His Cys Phe Gly Arg Asn Val Pro Arg Tyr  
 260 265 270

Ile His Ile Leu Leu Ala Asn Leu Tyr Val Val Val Pro Pro Met Leu  
 275 280 285

Asn Pro Val Ile Tyr Gly Val Arg Thr Lys Gln Ile Tyr Lys Cys Val  
 290 295 300

Lys Lys Ile Leu Leu Gln Glu Gln Gly Met Glu Lys Glu Glu Tyr Leu  
 305 310 315 320

Ile His Thr Arg Phe  
 325

<210> 431

<211> 927

<212> DNA

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&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(924)

&lt;223&gt;

<400> 431  
 atg aat acc act cta ttt cat cct tac tct ttc ctt ctt ctg gga att 48  
 Met Asn Thr Thr Leu Phe His Pro Tyr Ser Phe Leu Leu Leu Gly Ile  
 1 5 10 15  
 cct ggg ctg gaa agt atg cat ctc tgg gtt ggt ttt cct ttc ttt gct 96  
 Pro Gly Leu Glu Ser Met His Leu Trp Val Gly Phe Pro Phe Phe Ala  
 20 25 30  
 gtg ttc ctg aca gct gtc ctt ggg aat atc acc atc ctt ttt gtg att 144  
 Val Phe Leu Thr Ala Val Leu Gly Asn Ile Thr Ile Leu Phe Val Ile  
 35 40 45  
 cag act gac agt agt ctc cat cat ccc atg ttc tac ttc ctg gcc att 192  
 Gln Thr Asp Ser Ser Leu His His Pro Met Phe Tyr Phe Leu Ala Ile  
 50 55 60  
 ctg tca tct att gac ccg ggc ctg tct aca tcc acc atc cct aaa atg 240  
 Leu Ser Ser Ile Asp Pro Gly Leu Ser Thr Ser Thr Ile Pro Lys Met  
 65 70 75 80  
 ctt ggc acc ttc tgg ttt acc ctg aga gaa atc tcc ttt gaa gga tgc 288  
 Leu Gly Thr Phe Trp Phe Thr Leu Arg Glu Ile Ser Phe Glu Gly Cys  
 85 90 95  
 ctt acc cag atg ttc ttc atc cac ctg tgc act ggc atg gaa tca gct 336  
 Leu Thr Gln Met Phe Phe Ile His Leu Cys Thr Gly Met Glu Ser Ala  
 100 105 110  
 gtg ctt gtg gcc atg gcc tat gat tgc tat gtg gcc atc tgt gac cct 384  
 Val Leu Val Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Asp Pro  
 115 120 125  
 ctt tgc tac acg ttg gtg ctg aca aac aag gtg gtg tca gtt atg gca 432  
 Leu Cys Tyr Thr Leu Val Leu Thr Asn Lys Val Val Ser Val Met Ala  
 130 135 140  
 ctg gcc atc ttt ctg aga ccc tta gtc ttt gtc ata ccc ttt gtt cta 480  
 Leu Ala Ile Phe Leu Arg Pro Leu Val Phe Val Ile Pro Phe Val Leu  
 145 150 155 160  
 ttt atc cta agg ctt cca ttt tgt gga cac caa att att cct cat act 528  
 Phe Ile Leu Arg Leu Pro Phe Cys Gly His Gln Ile Ile Pro His Thr  
 165 170 175  
 tat ggt gag cac atg ggc att gcc cgc ctg tct tgt gcc agc atc agg 576  
 Tyr Gly Glu His Met Gly Ile Ala Arg Leu Ser Cys Ala Ser Ile Arg  
 180 185 190  
 gtt aac atc atc tat ggc tta tgt gcc atc tct atc ctg gtc ttt gac 624  
 Val Asn Ile Ile Tyr Gly Leu Cys Ala Ile Ser Ile Leu Val Phe Asp  
 195 200 205

atc ata gca att gtc att tcc tat gta cag atc ctt tgt gct gta ttt 672  
 Ile Ile Ala Ile Val Ile Ser Tyr Val Gln Ile Leu Cys Ala Val Phe  
 210 215 220  
 cta ctc tct tca cat gat gca cga ctc aag gca ttc agc acc tgt ggc 720  
 Leu Leu Ser Ser His Asp Ala Arg Leu Lys Ala Phe Ser Thr Cys Gly  
 225 230 235 240  
 tct cat gtg tgt gtc atg ttg act ttc tat atg cct gca ttt ttc tca 768  
 Ser His Val Cys Val Met Leu Thr Phe Tyr Met Pro Ala Phe Phe Ser  
 245 250 255  
 ttc atg acc cat agg ttt ggt cgg aat ata cct cac ttt atc cac att 816  
 Phe Met Thr His Arg Phe Gly Arg Asn Ile Pro His Phe Ile His Ile  
 260 265 270  
 ctt ctg gct aat ttc tat gta gtc att cca cct gct ctc aac tct gta 864  
 Leu Leu Ala Asn Phe Tyr Val Val Ile Pro Pro Ala Leu Asn Ser Val  
 275 280 285  
 att tat ggt gtc aga acc aaa cag att aga gca caa gtg ctg aaa atg 912  
 Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Ala Gln Val Leu Lys Met  
 290 295 300  
 ttt ttc aat aaa taa 927  
 Phe Phe Asn Lys  
 305

<210> 432  
 <211> 308  
 <212> PRT  
 <213> Homo Sapiens  
 <400> 432

Met Asn Thr Thr Leu Phe His Pro Tyr Ser Phe Leu Leu Leu Gly Ile  
 1 5 10 15  
 Pro Gly Leu Glu Ser Met His Leu Trp Val Gly Phe Pro Phe Phe Ala  
 20 25 30  
 Val Phe Leu Thr Ala Val Leu Gly Asn Ile Thr Ile Leu Phe Val Ile  
 35 40 45  
 Gln Thr Asp Ser Ser Leu His His Pro Met Phe Tyr Phe Leu Ala Ile  
 50 55 60  
 Leu Ser Ser Ile Asp Pro Gly Leu Ser Thr Ser Thr Ile Pro Lys Met  
 65 70 75 80  
 Leu Gly Thr Phe Trp Phe Thr Leu Arg Glu Ile Ser Phe Glu Gly Cys  
 85 90 95  
 Leu Thr Gln Met Phe Phe Ile His Leu Cys Thr Gly Met Glu Ser Ala

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100 105 110  
 Val Leu Val Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Asp Pro  
 115 120 125  
 Leu Cys Tyr Thr Leu Val Leu Thr Asn Lys Val Val Ser Val Met Ala  
 130 135 140  
 Leu Ala Ile Phe Leu Arg Pro Leu Val Phe Val Ile Pro Phe Val Leu  
 145 150 155 160  
 Phe Ile Leu Arg Leu Pro Phe Cys Gly His Gln Ile Ile Pro His Thr  
 165 170 175  
 Tyr Gly Glu His Met Gly Ile Ala Arg Leu Ser Cys Ala Ser Ile Arg  
 180 185 190  
 Val Asn Ile Ile Tyr Gly Leu Cys Ala Ile Ser Ile Leu Val Phe Asp  
 195 200 205  
 Ile Ile Ala Ile Val Ile Ser Tyr Val Gln Ile Leu Cys Ala Val Phe  
 210 215 220  
 Leu Leu Ser Ser His Asp Ala Arg Leu Lys Ala Phe Ser Thr Cys Gly  
 225 230 235 240  
 Ser His Val Cys Val Met Leu Thr Phe Tyr Met Pro Ala Phe Phe Ser  
 245 250 255  
 Phe Met Thr His Arg Phe Gly Arg Asn Ile Pro His Phe Ile His Ile  
 260 265 270  
 Leu Leu Ala Asn Phe Tyr Val Val Ile Pro Pro Ala Leu Asn Ser Val  
 275 280 285  
 Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Ala Gln Val Leu Lys Met  
 290 295 300  
 Phe Phe Asn Lys  
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<210> 433  
 <211> 936  
 <212> DNA  
 <213> Homo Sapiens  
 <220>

&lt;221&gt; CDS

&lt;222&gt; (1)..(933)

&lt;223&gt;

&lt;400&gt; 433

atg ttt tat cac aac aag agc ata ttt cac cca gtc aca ttt ttc ctc	48
Met Phe Tyr His Asn Lys Ser Ile Phe His Pro Val Thr Phe Phe Leu	
1 5 10 15	
att gga atc cca ggt ctg gaa gac ttc cac atg tgg atc tcc ggg cct	96
Ile Gly Ile Pro Gly Leu Glu Asp Phe His Met Trp Ile Ser Gly Pro	
20 25 30	
ttc tgc tct gtt tac ctt gtg gct ttg ctg ggc aat gcc acc att ctg	144
Phe Cys Ser Val Tyr Leu Val Ala Leu Leu Gly Asn Ala Thr Ile Leu	
35 40 45	
cta gtc atc aag gta gaa cag act ctc cgg gag ccc atg ttc tac ttc	192
Leu Val Ile Lys Val Glu Gln Thr Leu Arg Glu Pro Met Phe Tyr Phe	
50 55 60	
ctg gcc att ctt tcc act att gat ttg gcc ctt tct gca acc tct gtg	240
Leu Ala Ile Leu Ser Thr Ile Asp Leu Ala Leu Ser Ala Thr Ser Val	
65 70 75 80	
cct cgc atg ctg ggt atc ttc tgg ttt gat gct cac gag att aac tat	288
Pro Arg Met Leu Gly Ile Phe Trp Phe Asp Ala His Glu Ile Asn Tyr	
85 90 95	
gga gct tgt gtg gcc cag atg ttt ctg atc cat gcc ttc act ggc atg	336
Gly Ala Cys Val Ala Gln Met Phe Leu Ile His Ala Phe Thr Gly Met	
100 105 110	
gag gct gag gtc tta ctg gct atg gct ttt gac cgt tat gtg gcc atc	384
Glu Ala Glu Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile	
115 120 125	
tgt gct cca cta cat tac gca acc atc ttg aca tcc cta gtg ttg gtg	432
Cys Ala Pro Leu His Tyr Ala Thr Ile Leu Thr Ser Leu Val Leu Val	
130 135 140	
ggc att agc atg tgc att gta att cgt ccc gtt tta ctt aca ctt ccc	480
Gly Ile Ser Met Cys Ile Val Ile Arg Pro Val Leu Leu Thr Leu Pro	
145 150 155 160	
atg gtc tat ctt atc tac cgc cta ccc ttt tgt cag gct cac ata ata	528
Met Val Tyr Leu Ile Tyr Arg Leu Pro Phe Cys Gln Ala His Ile Ile	
165 170 175	
gcc cat tcc tac tgt gag cac atg ggc att gca aaa ttg tcc tgt gga	576
Ala His Ser Tyr Cys Glu His Met Gly Ile Ala Lys Leu Ser Cys Gly	
180 185 190	
aac att cgt atc aat ggt atc tat ggg ctt ttt gta gtt tct ttc ttt	624
Asn Ile Arg Ile Asn Gly Ile Tyr Gly Leu Phe Val Val Ser Phe Phe	
195 200 205	
gtt ctg aac ctg gtg ctc att ggc atc tcg tat gtt tac att ctc cgt	672
Val Leu Asn Leu Val Leu Ile Gly Ile Ser Tyr Val Tyr Ile Leu Arg	
210 215 220	

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gct gtc ttc cgc ctc cca tca cat gat gct cag cta aaa gcc cta agc 720  
 Ala Val Phe Arg Leu Pro Ser His Asp Ala Gln Leu Lys Ala Leu Ser 240  
 225 230 235

acg tgt ggc gct cat gtt gga gtc atc tgt gtt ttc tat atc cct tca 768  
 Thr Cys Gly Ala His Val Gly Val Ile Cys Val Phe Tyr Ile Pro Ser 255  
 245 250

gtc ttc tct ttc ctt act cat cga ttt gga cac caa ata cca ggt tac 816  
 Val Phe Ser Phe Leu Thr His Arg Phe Gly His Gln Ile Pro Gly Tyr 270  
 260 265

att cac att ctt gtt gcc aat ctc tat ttg att atc cca ccc tct ctc 864  
 Ile His Ile Leu Val Ala Asn Leu Tyr Leu Ile Ile Pro Pro Ser Leu 285  
 275 280

aac ccc atc att tat ggg gtg agg acc aaa cag att cga gag cga gtg 912  
 Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Glu Arg Val 300  
 290 295

ctc tat gtt ttt act aaa aaa taa 936  
 Leu Tyr Val Phe Thr Lys Lys 310  
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<210> 434  
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 <212> PRT  
 <213> Homo Sapiens

<400> 434

Met Phe Tyr His Asn Lys Ser Ile Phe His Pro Val Thr Phe Phe Leu 15  
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Ile Gly Ile Pro Gly Leu Glu Asp Phe His Met Trp Ile Ser Gly Pro 30  
 20 25

Phe Cys Ser Val Tyr Leu Val Ala Leu Leu Gly Asn Ala Thr Ile Leu 45  
 35 40

Leu Val Ile Lys Val Glu Gln Thr Leu Arg Glu Pro Met Phe Tyr Phe 60  
 50 55

Leu Ala Ile Leu Ser Thr Ile Asp Leu Ala Leu Ser Ala Thr Ser Val 80  
 65 70 75

Pro Arg Met Leu Gly Ile Phe Trp Phe Asp Ala His Glu Ile Asn Tyr 95  
 85 90

Gly Ala Cys Val Ala Gln Met Phe Leu Ile His Ala Phe Thr Gly Met 110  
 100 105

Glu Ala Glu Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125

Cys Ala Pro Leu His Tyr Ala Thr Ile Leu Thr Ser Leu Val Leu Val  
 130 135 140

Gly Ile Ser Met Cys Ile Val Ile Arg Pro Val Leu Leu Thr Leu Pro  
 145 150 155 160

Met Val Tyr Leu Ile Tyr Arg Leu Pro Phe Cys Gln Ala His Ile Ile  
 165 170 175

Ala His Ser Tyr Cys Glu His Met Gly Ile Ala Lys Leu Ser Cys Gly  
 180 185 190

Asn Ile Arg Ile Asn Gly Ile Tyr Gly Leu Phe Val Val Ser Phe Phe  
 195 200 205

Val Leu Asn Leu Val Leu Ile Gly Ile Ser Tyr Val Tyr Ile Leu Arg  
 210 215 220

Ala Val Phe Arg Leu Pro Ser His Asp Ala Gln Leu Lys Ala Leu Ser  
 225 230 235 240

Thr Cys Gly Ala His Val Gly Val Ile Cys Val Phe Tyr Ile Pro Ser  
 245 250 255

Val Phe Ser Phe Leu Thr His Arg Phe Gly His Gln Ile Pro Gly Tyr  
 260 265 270

Ile His Ile Leu Val Ala Asn Leu Tyr Leu Ile Ile Pro Pro Ser Leu  
 275 280 285

Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Arg Glu Arg Val  
 290 295 300

Leu Tyr Val Phe Thr Lys Lys  
 305 310

<210> 435  
 <211> 942  
 <212> DNA  
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<220>  
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 <222> (1) .. (939)  
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 1 5 10

gtt ggg atg cca ggg cta gaa tat gca cac atc tgg atc tct atc ccc 96  
 Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro 30  
 20 25

atc tgc agc atg tat ctt att gct att cta gga aat ggc acc att ctt 144  
 Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Gly Thr Ile Leu 45  
 35 40

ttt atc atc aag aca gag ccc tcc ttg cat gag ccc atg tac tat ttt 192  
 Phe Ile Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe 60  
 50 55

ctt tcc atg ttg gct atg tca gac ttg ggt ttg tct tta tca tct ctg 240  
 Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu 80  
 65 70 75

ccc act gtg tta agc atc ttc ctg ttc aat gct cct gaa att tca tcc 288  
 Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Ile Ser Ser 95  
 85 90

aat gcc tgc ttt gcc cag gaa ttc ttc att cat gga ttc tca gta ctg 336  
 Asn Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu 110  
 100 105

gag tcc tca gtc ctc ctg atc atg tca ttt gat aga ttc cta gcc atc 384  
 Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile 125  
 115 120

cac aac cct ctg aga tac acc tca atc ctg aca act gtc aga gtt gcc 432  
 His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala 140  
 130 135

caa ata ggg ata gta ttc tcc ttt aag agc atg ctc ctg gtt ctt ccc 480  
 Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro 160  
 145 150 155

ttc cct ttc act tta aga aac ttg aga tat tgc aag aaa aac caa tta 528  
 Phe Pro Phe Thr Leu Arg Asn Leu Arg Tyr Cys Lys Lys Asn Gln Leu 175  
 165 170

tcc cat tcc tac tgt ctc cac cag gat gtc atg aag ttg gcc tgt tct 576  
 Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ser 190  
 180 185

gac aac aga att gat gtt atc tat ggc ttt ttt gga gca ctc tgc ctt 624  
 Asp Asn Arg Ile Asp Val Ile Tyr Gly Phe Phe Gly Ala Leu Cys Leu 205  
 195 200

atg gta gac ttt att ctc att gct gtg tct tac acc ctg atc ctc aag 672  
 Met Val Asp Phe Ile Leu Ile Ala Val Ser Tyr Thr Leu Ile Leu Lys 220  
 210 215

act gta ctg gga att gca tcc aaa aag gag cag ctt aag gct ctc aat 720  
 Thr Val Leu Gly Ile Ala Ser Lys Lys Glu Gln Leu Lys Ala Leu Asn



225                      230                      235                      240  
 act tgt gtt tca cac atc tgt gca gtg atc atc ttc tac ctg ccc atc      768  
 Thr Cys Val Ser His Ile Cys Ala Val Ile Ile Phe Tyr Leu Pro Ile  
                                  245                                   250                                   255  
  
 atc aac ctg gcc gtt gtc cac cgc ttt gcc cgg cat gtc tct ccc ctc      816  
 Ile Asn Leu Ala Val Val His Arg Phe Ala Arg His Val Ser Pro Leu  
                                  260                                   265                                   270  
  
 att aat gtt ctc atg gca aat gtt ctc cta ctt gta cct cca ctg acg      864  
 Ile Asn Val Leu Met Ala Asn Val Leu Leu Leu Val Pro Pro Leu Thr  
                                  275                                   280                                   285  
  
 aac cca att gtt tat tgt gta aaa act aaa cag att aga gtg aga gtt      912  
 Asn Pro Ile Val Tyr Cys Val Lys Thr Lys Gln Ile Arg Val Arg Val  
                                  290                                   295                                   300  
  
 gta gca aaa ttg tgt caa cgg aag att taa      942  
 Val Ala Lys Leu Cys Gln Arg Lys Ile  
 305                                   310  
  
 <210> 436  
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 <400> 436  
  
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 1                                   5                                   10                                   15  
  
 Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro  
                                  20                                   25                                   30  
  
 Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Gly Thr Ile Leu  
                                  35                                   40                                   45  
  
 Phe Ile Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe  
                                  50                                   55                                   60  
  
 Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu  
 65                                   70                                   75                                   80  
  
 Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Ile Ser Ser  
                                  85                                   90                                   95  
  
 Asn Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu  
                                  100                                   105                                   110  
  
 Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile  
                                  115                                   120                                   125

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His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala  
 130 135 140

Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro  
 145 150 155 160

Phe Pro Phe Thr Leu Arg Asn Leu Arg Tyr Cys Lys Lys Asn Gln Leu  
 165 170 175

Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ser  
 180 185 190

Asp Asn Arg Ile Asp Val Ile Tyr Gly Phe Phe Gly Ala Leu Cys Leu  
 195 200 205

Met Val Asp Phe Ile Leu Ile Ala Val Ser Tyr Thr Leu Ile Leu Lys  
 210 215 220

Thr Val Leu Gly Ile Ala Ser Lys Lys Glu Gln Leu Lys Ala Leu Asn  
 225 230 235 240

Thr Cys Val Ser His Ile Cys Ala Val Ile Ile Phe Tyr Leu Pro Ile  
 245 250 255

Ile Asn Leu Ala Val Val His Arg Phe Ala Arg His Val Ser Pro Leu  
 260 265 270

Ile Asn Val Leu Met Ala Asn Val Leu Leu Leu Val Pro Pro Leu Thr  
 275 280 285

Asn Pro Ile Val Tyr Cys Val Lys Thr Lys Gln Ile Arg Val Arg Val  
 290 295 300

Val Ala Lys Leu Cys Gln Arg Lys Ile  
 305 310

<210> 437  
 <211> 948  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (945)  
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<400> 437

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Met Gly Asp Trp Asn Asn Ser Asp Ala Val Glu Pro Ile Phe Ile Leu	
1 5 10 15	
agg ggt ttt cct gga ctg gag tat gtt cat tct tgg ctc tcc atc ctc	96
Arg Gly Phe Pro Gly Leu Glu Tyr Val His Ser Trp Leu Ser Ile Leu	
20 25 30	
ttc tgt ctt gca tat ttg gta gca ttt atg ggt aat gtt acc atc ctg	144
Phe Cys Leu Ala Tyr Leu Val Ala Phe Met Gly Asn Val Thr Ile Leu	
35 40 45	
tct gtc att tgg ata gaa tcc tct ctc cat cag ccc atg tat tac ttt	192
Ser Val Ile Trp Ile Glu Ser Ser Leu His Gln Pro Met Tyr Tyr Phe	
50 55 60	
att tcc atc tta gca gtg aat gac ctg ggg atg tcc ctg tct aca ctt	240
Ile Ser Ile Leu Ala Val Asn Asp Leu Gly Met Ser Leu Ser Thr Leu	
65 70 75 80	
ccc acc atg ctt gct gtg tta tgg ttg gat gct cca gag atc cag gca	288
Pro Thr Met Leu Ala Val Leu Trp Leu Asp Ala Pro Glu Ile Gln Ala	
85 90 95	
agt gct tgc tat gct cag ctg ttc ttc atc cac aca ttc aca ttc ctg	336
Ser Ala Cys Tyr Ala Gln Leu Phe Phe Ile His Thr Phe Thr Phe Leu	
100 105 110	
gag tcc tca gtg ttg ctg gcc atg gcc ttt gac cgt ttt gtt gct atc	384
Glu Ser Val Leu Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile	
115 120 125	
tgc cat cca ctg cac tac ccc acc atc ctc acc aac agt gta att ggc	432
Cys His Pro Leu His Tyr Pro Thr Ile Leu Thr Asn Ser Val Ile Gly	
130 135 140	
aaa att ggt ttg gcc tgt ttg cta cga agc ttg gga gtt gta ctt ccc	480
Lys Ile Gly Leu Ala Cys Leu Leu Arg Ser Leu Gly Val Val Leu Pro	
145 150 155 160	
aca cct ttg cta ctg aga cac tat cac tac tgc cat ggc aat gcc ctc	528
Thr Pro Leu Leu Leu Arg His Tyr His Tyr Cys His Gly Asn Ala Leu	
165 170 175	
tct cac gcc ttc tgt ttg cac cag gat gtt cta aga tta tcc tgt aca	576
Ser His Ala Phe Cys Leu His Gln Asp Val Leu Arg Leu Ser Cys Thr	
180 185 190	
gat gcc agg acc aac agt att tat ggg ctt tgt gta gtc att gcc aca	624
Asp Ala Arg Thr Asn Ser Ile Tyr Gly Leu Cys Val Val Ile Ala Thr	
195 200 205	
cta ggt gtg gat tca atc ttc ata ctt ctt tct tat gtt ctg att ctt	672
Leu Gly Val Asp Ser Ile Phe Ile Leu Leu Ser Tyr Val Leu Ile Leu	
210 215 220	
aat act gtg ctg gat att gca tct cgt gaa gag cag cta aag gca ctc	720
Asn Thr Val Leu Asp Ile Ala Ser Arg Glu Glu Gln Leu Lys Ala Leu	
225 230 235 240	
aac aca tgt gta tcc cat atc tgt gtg gtg ctt atc ttc ttt gtg cca	768

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Asn Thr Cys Val Ser His Ile Cys Val Val Leu Ile Phe Phe Val Pro  
 245 250 255

gtt att ggg gtg tca atg gtc cat cgc ttt ggg aag cat ctg tct ccc 816  
 Val Ile Gly Val Ser Met Val His Arg Phe Gly Lys His Leu Ser Pro  
 260 265 270

ata gtc cac atc ctc atg gca gac atc tac ctt ctt ctt ccc cca gtc 864  
 Ile Val His Ile Leu Met Ala Asp Ile Tyr Leu Leu Leu Pro Pro Val  
 275 280 285

ctt aac cct att gtc tat agt gtc aga aca aag cag att cgt cta gga 912  
 Leu Asn Pro Ile Val Tyr Ser Val Arg Thr Lys Gln Ile Arg Leu Gly  
 290 295 300

att ctc cac aag ttt gtc cta agg agg agg ttt taa 948  
 Ile Leu His Lys Phe Val Leu Arg Arg Arg Phe  
 305 310 315

<210> 438  
 <211> 315  
 <212> PRT  
 <213> Homo Sapiens

<400> 438

Met Gly Asp Trp Asn Asn Ser Asp Ala Val Glu Pro Ile Phe Ile Leu  
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Arg Gly Phe Pro Gly Leu Glu Tyr Val His Ser Trp Leu Ser Ile Leu  
 20 25 30

Phe Cys Leu Ala Tyr Leu Val Ala Phe Met Gly Asn Val Thr Ile Leu  
 35 40 45

Ser Val Ile Trp Ile Glu Ser Ser Leu His Gln Pro Met Tyr Tyr Phe  
 50 55 60

Ile Ser Ile Leu Ala Val Asn Asp Leu Gly Met Ser Leu Ser Thr Leu  
 65 70 75 80

Pro Thr Met Leu Ala Val Leu Trp Leu Asp Ala Pro Glu Ile Gln Ala  
 85 90 95

Ser Ala Cys Tyr Ala Gln Leu Phe Phe Ile His Thr Phe Thr Phe Leu  
 100 105 110

Glu Ser Ser Val Leu Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125

Cys His Pro Leu His Tyr Pro Thr Ile Leu Thr Asn Ser Val Ile Gly  
 130 135 140

Lys Ile Gly Leu Ala Cys Leu Leu Arg Ser Leu Gly Val Val Leu Pro  
145 150 155 160

Thr Pro Leu Leu Leu Arg His Tyr His Tyr Cys His Gly Asn Ala Leu  
165 170 175

Ser His Ala Phe Cys Leu His Gln Asp Val Leu Arg Leu Ser Cys Thr  
180 185 190

Asp Ala Arg Thr Asn Ser Ile Tyr Gly Leu Cys Val Val Ile Ala Thr  
195 200 205

Leu Gly Val Asp Ser Ile Phe Ile Leu Leu Ser Tyr Val Leu Ile Leu  
210 215 220

Asn Thr Val Leu Asp Ile Ala Ser Arg Glu Glu Gln Leu Lys Ala Leu  
225 230 235 240

Asn Thr Cys Val Ser His Ile Cys Val Val Leu Ile Phe Phe Val Pro  
245 250 255

Val Ile Gly Val Ser Met Val His Arg Phe Gly Lys His Leu Ser Pro  
260 265 270

Ile Val His Ile Leu Met Ala Asp Ile Tyr Leu Leu Leu Pro Pro Val  
275 280 285

Leu Asn Pro Ile Val Tyr Ser Val Arg Thr Lys Gln Ile Arg Leu Gly  
290 295 300

Ile Leu His Lys Phe Val Leu Arg Arg Arg Phe  
305 310 315

<210> 439

<211> 942

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (1)..(939)

<223>

<400> 439

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Met Ser Ile Ile Asn Thr Ser Tyr Val Glu Ile Thr Thr Phe Phe Leu  
1 5 10 15

48

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gtt ggg atg cca ggg cta gaa tat gca cac atc tgg atc tct atc ccc 96  
 Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro  
 20 25 30

atc tgc agc atg tat ctt att gct att cta gga aat ggc acc att ctt 144  
 Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Gly Thr Ile Leu  
 35 40 45

ttt atc atc aag aca gag ccc tcc ttg cat ggg ccc atg tac tat ttt 192  
 Phe Ile Ile Lys Thr Glu Pro Ser Leu His Gly Pro Met Tyr Tyr Phe  
 50 55 60

ctt tcc atg ttg gct atg tca gac ttg ggt ttg tct tta tca tct ctg 240  
 Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu  
 65 70 75 80

ccc act gtg tta agc atc ttc ctg ttc aat gcc cct gaa act tct tct 288  
 Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Thr Ser Ser  
 85 90 95

agt gcc tgc ttt gcc cag gaa ttc ttc att cat gga ttc tca gta ctg 336  
 Ser Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu  
 100 105 110

gag tcc tca gtc ctc ctg atc atg tca ttt gat aga ttc cta gcc atc 384  
 Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile  
 115 120 125

cac aat cct ctg aga tac acc tca atc ctg aca act gtc aga gtt gcc 432  
 His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala  
 130 135 140

caa ata ggg ata gta ttc tcc ttt aag agc atg ctc ctg gtt ctt ccc 480  
 Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro  
 145 150 155 160

ttc cct ttc act tta aga agc ttg aga tat tgc aag aaa aac caa tta 528  
 Phe Pro Phe Thr Leu Arg Ser Leu Arg Tyr Cys Lys Lys Asn Gln Leu  
 165 170 175

tcc cat tcc tac tgt ctc cac cag gat gtc atg aag ttg gcc tgt tct 576  
 Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ser  
 180 185 190

gac aac aga att gat gtt atc tat ggc ttt ttt gga gca ctc tgc ctt 624  
 Asp Asn Arg Ile Asp Val Ile Tyr Gly Phe Phe Gly Ala Leu Cys Leu  
 195 200 205

atg gta gac ttt att ctc att gct gtg tct tac acc ctg atc ctc aag 672  
 Met Val Asp Phe Ile Leu Ile Ala Val Ser Tyr Thr Leu Ile Leu Lys  
 210 215 220

act gta ccg gga att gca tcc aaa aag gag gag ctt aag gct ctc aat 720  
 Thr Val Pro Gly Ile Ala Ser Lys Lys Glu Leu Lys Ala Leu Asn  
 225 230 235 240

act tgt gtt tca cac atc tgt gca gtg atc atc ttc tac ctg ccc atc 768  
 Thr Cys Val Ser His Ile Cys Ala Val Ile Ile Phe Tyr Leu Pro Ile  
 245 250 255

atc aac ctg gcc gtt gtc cac cgc ttt gcc ggg cat gtc tct ccc ctc 816  
 Ile Asn Leu Ala Val Val His Arg Phe Ala Gly His Val Ser Pro Leu  
 260 265 270

att aat gtt ctc atg gca aat gtt ctc cta ctt gta cct ccg ctg atg 864  
 Ile Asn Val Leu Met Ala Asn Val Leu Leu Leu Val Pro Pro Leu Met  
 275 280 285

aaa cca att gtt tat tgt gta aaa act aaa cag att aga gtg aga gtt 912  
 Lys Pro Ile Val Tyr Cys Val Lys Thr Lys Gln Ile Arg Val Arg Val  
 290 295 300

gta gca aaa ttg tgt caa tgg aag att taa 942  
 Val Ala Lys Leu Cys Gln Trp Lys Ile  
 305 310

<210> 440

<211> 313

<212> PRT

<213> Homo Sapiens

<400> 440

Met Ser Ile Ile Asn Thr Ser Tyr Val Glu Ile Thr Thr Phe Phe Leu  
 1 5 10 15

Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro  
 20 25 30

Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Gly Thr Ile Leu  
 35 40 45

Phe Ile Ile Lys Thr Glu Pro Ser Leu His Gly Pro Met Tyr Tyr Phe  
 50 55 60

Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu  
 65 70 75 80

Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Thr Ser Ser  
 85 90 95

Ser Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu  
 100 105 110

Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile  
 115 120 125

His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala  
 130 135 140

Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro

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<400> 441
atg act gaa aca tcc ctg tct tct cag tgc ttc cct atg tcg gtc ctc
Met Thr Glu Thr Ser Leu Ser Ser Gln Cys Phe Pro Met Ser Val Leu
1 5 10 15
aat aat acc att gct gag cct ctg atc ttc ctc ctg atg ggc att cca
Asn Asn Thr Ile Ala Glu Pro Leu Ile Phe Leu Leu Met Gly Ile Pro

```



			20				25				30							
ggc	ctg	aaa	gcc	acc	cag	tac	tgg	atc	tcc	atc	cct	ttt	tgt	ctc	cta	144		
Gly	Leu	Lys	Ala	Thr	Gln	Tyr	Trp	Ile	Ser	Ile	Pro	Phe	Cys	Leu	Leu			
		35				40						45						
tat	gtt	gtt	gcc	gtc	tct	gga	aat	agc	atg	atc	ctg	ttt	gtg	gtc	ctc	192		
Tyr	Val	Val	Ala	Val	Ser	Gly	Asn	Ser	Met	Ile	Leu	Phe	Val	Val	Leu			
		50				55				60								
tgt	gaa	cgg	agc	ctc	cat	aag	cct	atg	tac	tat	ttc	ctc	tct	atg	ctt	240		
Cys	Glu	Arg	Ser	Leu	His	Lys	Pro	Met	Tyr	Tyr	Phe	Leu	Ser	Met	Leu			
65				70				75						80				
tca	gcc	aca	gac	ctg	agc	ttg	tcc	ctg	tgt	aca	ctt	tct	act	acc	ctt	288		
Ser	Ala	Thr	Asp	Leu	Ser	Leu	Ser	Leu	Cys	Thr	Leu	Ser	Thr	Thr	Leu			
				85				90						95				
ggt	gtc	ttc	tgg	ttt	gaa	gcc	cga	gaa	atc	aac	cta	aat	gcc	tgc	att	336		
Gly	Val	Phe	Trp	Phe	Glu	Ala	Arg	Glu	Ile	Asn	Leu	Asn	Ala	Cys	Ile			
		100				105						110						
gcc	cag	atg	ttc	ttt	cta	cac	gga	ttt	act	ttc	atg	gag	tct	ggg	gtt	384		
Ala	Gln	Met	Phe	Phe	Leu	His	Gly	Phe	Thr	Phe	Met	Glu	Ser	Gly	Val			
		115				120						125						
cta	ctg	gcc	atg	gcc	ttt	gat	cgt	ttt	gtg	gcc	atc	tgt	tac	cca	ctg	432		
Leu	Leu	Ala	Met	Ala	Phe	Asp	Arg	Phe	Val	Ala	Ile	Cys	Tyr	Pro	Leu			
		130				135				140								
aga	tac	act	acc	atc	ctt	acc	aat	gcc	cga	att	gcc	aag	att	ggg	atg	480		
Arg	Tyr	Thr	Thr	Ile	Leu	Thr	Asn	Ala	Arg	Ile	Ala	Lys	Ile	Gly	Met			
145				150				155						160				
agc	atg	ttg	ata	aga	aat	gtt	gcc	gtc	atg	ttg	cca	gtc	atg	ctc	ttt	528		
Ser	Met	Leu	Ile	Arg	Asn	Val	Ala	Val	Met	Leu	Pro	Val	Met	Leu	Phe			
				165				170						175				
gtc	aag	agg	ttg	tcc	ttc	tgc	agt	tct	atg	gtc	ctt	tca	cat	tct	tac	576		
Val	Lys	Arg	Leu	Ser	Phe	Cys	Ser	Ser	Met	Val	Leu	Ser	His	Ser	Tyr			
		180				185						190						
tgc	tac	cat	gtt	gat	ctc	atc	caa	ctc	tcc	tgc	aca	gac	aat	agg	atc	624		
Cys	Tyr	His	Val	Asp	Leu	Ile	Gln	Leu	Ser	Cys	Thr	Asp	Asn	Arg	Ile			
		195				200						205						
aac	agc	atc	ctt	ggt	ctg	ttt	gcg	ctt	ttg	tcc	act	aca	ggg	ttt	gac	672		
Asn	Ser	Ile	Leu	Gly	Leu	Phe	Ala	Leu	Leu	Ser	Thr	Thr	Gly	Phe	Asp			
		210				215				220								
tgc	cct	tgc	atc	ctg	ctc	tcc	tat	atc	ctg	atc	att	cga	tct	gtc	ctc	720		
Cys	Pro	Cys	Ile	Leu	Leu	Ser	Tyr	Ile	Leu	Ile	Ile	Arg	Ser	Val	Leu			
225				230				235						240				
agc	att	gct	tcc	tca	gaa	gag	agg	cgg	aaa	gcc	ttc	aac	acc	tgc	aca	768		
Ser	Ile	Ala	Ser	Ser	Glu	Glu	Arg	Arg	Lys	Ala	Phe	Asn	Thr	Cys	Thr			
				245				250						255				
tcc	cac	atc	agt	gct	gtt	tcc	atc	ttc	tac	ctc	cct	ctc	atc	agt	ttg	816		
Ser	His	Ile	Ser	Ala	Val	Ser	Ile	Phe	Tyr	Leu	Pro	Leu	Ile	Ser	Leu			
		260				265						270						

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tct ctt gtc cat cgc tat ggc cat tca gca cct cca ttt gtc cac atc 864  
 Ser Leu Val His Arg Tyr Gly His Ser Ala Pro Pro Phe Val His Ile  
 275 280 285  
 atc atg gcc aat gtc ttt ctg cta atc cct cct gtg ctc aac cct att 912  
 Ile Met Ala Asn Val Phe Leu Leu Ile Pro Pro Val Leu Asn Pro Ile  
 290 295 300  
 att tac agt gta aag att aag cag att caa aag gcc att atc aag gtc 960  
 Ile Tyr Ser Val Lys Ile Lys Gln Ile Gln Lys Ala Ile Ile Lys Val  
 305 310 315 320  
 tta att cag aag cac tcc aaa tct aat cat cag cta ttt ctg att aga 1008  
 Leu Ile Gln Lys His Ser Lys Ser Asn His Gln Leu Phe Leu Ile Arg  
 325 330 335  
 gat aaa gcc att tat gaa taa 1029  
 Asp Lys Ala Ile Tyr Glu  
 340

<210> 442  
 <211> 342  
 <212> PRT  
 <213> Homo Sapiens

<400> 442

Met Thr Glu Thr Ser Leu Ser Ser Gln Cys Phe Pro Met Ser Val Leu  
 1 5 10 15

Asn Asn Thr Ile Ala Glu Pro Leu Ile Phe Leu Leu Met Gly Ile Pro  
 20 25 30

Gly Leu Lys Ala Thr Gln Tyr Trp Ile Ser Ile Pro Phe Cys Leu Leu  
 35 40 45

Tyr Val Val Ala Val Ser Gly Asn Ser Met Ile Leu Phe Val Val Leu  
 50 55 60

Cys Glu Arg Ser Leu His Lys Pro Met Tyr Tyr Phe Leu Ser Met Leu  
 65 70 75 80

Ser Ala Thr Asp Leu Ser Leu Ser Leu Cys Thr Leu Ser Thr Thr Leu  
 85 90 95

Gly Val Phe Trp Phe Glu Ala Arg Glu Ile Asn Leu Asn Ala Cys Ile  
 100 105 110

Ala Gln Met Phe Phe Leu His Gly Phe Thr Phe Met Glu Ser Gly Val  
 115 120 125

Leu Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile Cys Tyr Pro Leu  
 130 135 140

Arg Tyr Thr Thr Ile Leu Thr Asn Ala Arg Ile Ala Lys Ile Gly Met  
 145 150 155 160

Ser Met Leu Ile Arg Asn Val Ala Val Met Leu Pro Val Met Leu Phe  
 165 170 175

Val Lys Arg Leu Ser Phe Cys Ser Ser Met Val Leu Ser His Ser Tyr  
 180 185 190

Cys Tyr His Val Asp Leu Ile Gln Leu Ser Cys Thr Asp Asn Arg Ile  
 195 200 205

Asn Ser Ile Leu Gly Leu Phe Ala Leu Leu Ser Thr Thr Gly Phe Asp  
 210 215 220

Cys Pro Cys Ile Leu Leu Ser Tyr Ile Leu Ile Ile Arg Ser Val Leu  
 225 230 235 240

Ser Ile Ala Ser Ser Glu Glu Arg Arg Lys Ala Phe Asn Thr Cys Thr  
 245 250 255

Ser His Ile Ser Ala Val Ser Ile Phe Tyr Leu Pro Leu Ile Ser Leu  
 260 265 270

Ser Leu Val His Arg Tyr Gly His Ser Ala Pro Pro Phe Val His Ile  
 275 280 285

Ile Met Ala Asn Val Phe Leu Leu Ile Pro Pro Val Leu Asn Pro Ile  
 290 295 300

Ile Tyr Ser Val Lys Ile Lys Gln Ile Gln Lys Ala Ile Ile Lys Val  
 305 310 315 320

Leu Ile Gln Lys His Ser Lys Ser Asn His Gln Leu Phe Leu Ile Arg  
 325 330 335

Asp Lys Ala Ile Tyr Glu  
 340

<210> 443

<211> 957

<212> DNA

<213> Homo Sapiens

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&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) .. (954)

&lt;223&gt;

<400> 443  
 atg gac aag ata aac cag aca ttt gtg aga gaa ttc att ctt ctg gga 48  
 Met Asp Lys Ile Asn Gln Thr Phe Val Arg Glu Phe Ile Leu Leu Gly 15  
 1 5 10

ctc tct ggt tac ccc aaa ctt gag atc att ttc ttt gct ctg att cta 96  
 Leu Ser Gly Tyr Pro Lys Leu Glu Ile Ile Phe Phe Ala Leu Ile Leu 30  
 20 25

gtt atg tac gta gtg att cta att ggc aat ggt gtt ctg atc ata gca 144  
 Val Met Tyr Val Val Ile Leu Ile Gly Asn Gly Val Leu Ile Ile Ala 45  
 35 40

agc atc ttg gat tct cgt ctt cac atg ccc atg tac ttc ttc ctg ggc 192  
 Ser Ile Leu Asp Ser Arg Leu His Met Pro Met Tyr Phe Phe Leu Gly 60  
 50 55

aac ctc tct ttc ctg gat atc tgc tat aca acc tcc tcc att ccc tca 240  
 Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Ile Pro Ser 80  
 65 70 75

aca ctg gtg agc tta atc tca aag aaa aga aac att tcc ttc tct gga 288  
 Thr Leu Val Ser Leu Ile Ser Lys Lys Arg Asn Ile Ser Phe Ser Gly 95  
 85 90

tgt gca gtg cag atg ttc ttt ggg ttt gca atg ggg tca aca gaa tgt 336  
 Cys Ala Val Gln Met Phe Phe Gly Phe Ala Met Gly Ser Thr Glu Cys 110  
 100 105

ttc ctc ctt ggc atg atg gca ttt gat cgt tat gtg gcc atc tgt aac 384  
 Phe Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Asn 125  
 115 120

cct ctg aga tac ccc atc atc atg aac aag gtg gtg tat gta ctg ctg 432  
 Pro Leu Arg Tyr Pro Ile Ile Met Asn Lys Val Val Tyr Val Leu Leu 140  
 130 135

act tct gta tca tgg ctt tct ggt gga atc aat tca act gtg caa aca 480  
 Thr Ser Val Ser Trp Leu Ser Gly Gly Ile Asn Ser Thr Val Gln Thr 160  
 145 150 155

tca ctt gcc atg cga tgg cct ttc tgt ggg aac aat att att aat cat 528  
 Ser Leu Ala Met Arg Trp Pro Phe Cys Gly Asn Asn Ile Ile Asn His 175  
 165 170

ttc tta tgc gag atc tta gct gtc cta aaa tta gct tgt tct gat ata 576  
 Phe Leu Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ser Asp Ile 190  
 180 185

tct gtc aat att gtt acc cta gca gtg tca aat att gct ttc cta gtt 624  
 Ser Val Asn Ile Val Thr Leu Ala Val Ser Asn Ile Ala Phe Leu Val 205  
 195 200

ctt cct ctg ctc gtg att ttt ttc tcc tat atg ttc atc ctc tac acc 672  
 Leu Pro Leu Leu Val Ile Phe Phe Ser Tyr Met Phe Ile Leu Tyr Thr

210	215	220	
atc ttg cga acg aac tcg gcc aca gga aga cac aag gca ttt tct aca			720
Ile Leu Arg Thr Asn Ser Ala Thr Gly Arg His Lys Ala Phe Ser Thr			
225	230	235	240
tgc tca gct cac ctg act gtg gtg atc ata ttt tat ggt acc atc ttc			768
Cys Ser Ala His Leu Thr Val Val Ile Ile Phe Tyr Gly Thr Ile Phe			
245	250		255
ttt atg tat gca aaa cct aag tcc cag gac ctc ctt ggg aaa gac aac			816
Phe Met Tyr Ala Lys Pro Lys Ser Gln Asp Leu Leu Gly Lys Asp Asn			
260	265		270
ttg caa gct aca gag ggg ctt gtt tcc atg ttt tat ggg gtt gtg acc			864
Leu Gln Ala Thr Glu Gly Leu Val Ser Met Phe Tyr Gly Val Val Thr			
275	280		285
ccc atg tta aac ccc ata atc tat agc ttg aga aat aaa gat gta aaa			912
Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys			
290	295		300
gct gct ata aaa tat ttg ctg agc agg aaa gct att aac cag taa			957
Ala Ala Ile Lys Tyr Leu Leu Ser Arg Lys Ala Ile Asn Gln			
305	310		315

<210> 444  
 <211> 318  
 <212> PRT  
 <213> Homo Sapiens

<400> 444

Met Asp Lys Ile Asn Gln Thr Phe Val Arg Glu Phe Ile Leu Leu Gly			
1	5	10	15
Leu Ser Gly Tyr Pro Lys Leu Glu Ile Ile Phe Phe Ala Leu Ile Leu			
20	25		30
Val Met Tyr Val Val Ile Leu Ile Gly Asn Gly Val Leu Ile Ile Ala			
35	40		45
Ser Ile Leu Asp Ser Arg Leu His Met Pro Met Tyr Phe Phe Leu Gly			
50	55		60
Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Thr Ser Ser Ile Pro Ser			
65	70		75
Thr Leu Val Ser Leu Ile Ser Lys Lys Arg Asn Ile Ser Phe Ser Gly			
85	90		95
Cys Ala Val Gln Met Phe Phe Gly Phe Ala Met Gly Ser Thr Glu Cys			
100	105		110

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Phe Leu Leu Gly Met Met Ala Phe Asp Arg Tyr Val Ala Ile Cys Asn  
 115 120 125

Pro Leu Arg Tyr Pro Ile Ile Met Asn Lys Val Val Tyr Val Leu Leu  
 130 135 140

Thr Ser Val Ser Trp Leu Ser Gly Gly Ile Asn Ser Thr Val Gln Thr  
 145 150 155 160

Ser Leu Ala Met Arg Trp Pro Phe Cys Gly Asn Asn Ile Ile Asn His  
 165 170 175

Phe Leu Cys Glu Ile Leu Ala Val Leu Lys Leu Ala Cys Ser Asp Ile  
 180 185 190

Ser Val Asn Ile Val Thr Leu Ala Val Ser Asn Ile Ala Phe Leu Val  
 195 200 205

Leu Pro Leu Leu Val Ile Phe Phe Ser Tyr Met Phe Ile Leu Tyr Thr  
 210 215 220

Ile Leu Arg Thr Asn Ser Ala Thr Gly Arg His Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ser Ala His Leu Thr Val Val Ile Ile Phe Tyr Gly Thr Ile Phe  
 245 250 255

Phe Met Tyr Ala Lys Pro Lys Ser Gln Asp Leu Leu Gly Lys Asp Asn  
 260 265 270

Leu Gln Ala Thr Glu Gly Leu Val Ser Met Phe Tyr Gly Val Val Thr  
 275 280 285

Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys  
 290 295 300

Ala Ala Ile Lys Tyr Leu Leu Ser Arg Lys Ala Ile Asn Gln  
 305 310 315

<210> 445  
 <211> 948  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(945)

&lt;223&gt;

&lt;400&gt; 445

atg	gtg	ctg	gct	tca	ggg	aac	agc	tct	tct	cat	cct	gtg	tcc	ttc	atc	48
Met	Val	Leu	Ala	Ser	Gly	Asn	Ser	Ser	Ser	His	Pro	Val	Ser	Phe	Ile	
1				5					10					15		
ctg	ctt	gga	atc	cca	ggc	ctg	gag	agt	ttc	cag	ttg	tgg	att	gcc	ttt	96
Leu	Leu	Gly	Ile	Pro	Gly	Leu	Glu	Ser	Phe	Gln	Leu	Trp	Ile	Ala	Phe	
			20					25					30			
cag	ttc	tgt	gcc	acg	tat	gct	gtg	gct	gtt	gtt	gga	aat	atc	act	ctc	144
Pro	Phe	Cys	Ala	Thr	Tyr	Ala	Val	Ala	Val	Val	Gly	Asn	Ile	Thr	Leu	
		35					40					45				
ctc	cat	gta	atc	aga	att	gac	cac	acc	ctg	cat	gag	ccc	atg	tac	ctc	192
Leu	His	Val	Ile	Arg	Ile	Asp	His	Thr	Leu	His	Glu	Pro	Met	Tyr	Leu	
	50					55					60					
ttt	ctg	gcc	atg	ctg	gcc	atc	act	gac	ctg	gtc	ctc	tcc	tcc	tcc	act	240
Phe	Leu	Ala	Met	Leu	Ala	Ile	Thr	Asp	Leu	Val	Leu	Ser	Ser	Ser	Thr	
65				70					75						80	
caa	cct	aag	atg	ttg	gcc	ata	ttc	tgg	ttt	cat	gct	cat	gag	att	cag	288
Gln	Pro	Lys	Met	Leu	Ala	Ile	Phe	Trp	Phe	His	Ala	His	Glu	Ile	Gln	
			85					90						95		
tac	cat	gcc	tgc	ctc	atc	cag	gtg	ttc	ttc	atc	cat	gcc	ttt	tct	tct	336
Tyr	His	Ala	Cys	Leu	Ile	Gln	Val	Phe	Phe	Ile	His	Ala	Phe	Ser	Ser	
			100					105					110			
gtg	gag	tct	ggg	gtg	ctc	atg	gct	atg	gcc	ctg	gac	tgc	tac	gtg	gct	384
Val	Glu	Ser	Gly	Val	Leu	Met	Ala	Met	Ala	Leu	Asp	Cys	Tyr	Val	Ala	
		115				120						125				
acc	tgc	ttc	cca	ctc	cga	cac	tct	agc	atc	ctg	acc	cca	tgc	gtc	gtg	432
Thr	Cys	Phe	Pro	Leu	Arg	His	Ser	Ser	Ile	Leu	Thr	Pro	Ser	Val	Val	
		130				135					140					
atc	aaa	ctg	ggg	acc	atc	gtg	atg	ctg	aga	ggg	ctg	ctg	tgg	gtg	agc	480
Ile	Lys	Leu	Gly	Thr	Ile	Val	Met	Leu	Arg	Gly	Leu	Leu	Trp	Val	Ser	
145					150					155					160	
ccc	ttc	tgc	ttc	atg	gtg	tct	agg	atg	ccc	ttc	tgc	caa	cac	caa	gcc	528
Pro	Phe	Cys	Phe	Met	Val	Ser	Arg	Met	Pro	Phe	Cys	Gln	His	Gln	Ala	
				165				170						175		
att	ccc	cag	tca	tac	tgt	gag	cac	atg	gct	gtg	ctg	aag	ttg	gtg	tgt	576
Ile	Pro	Gln	Ser	Tyr	Cys	Glu	His	Met	Ala	Val	Leu	Lys	Leu	Val	Cys	
			180					185					190			
gct	gat	aca	agc	ata	agt	cgt	ggg	tat	ggg	ctc	ttt	gtg	gcc	ttc	tct	624
Ala	Asp	Thr	Ser	Ile	Ser	Arg	Gly	Tyr	Gly	Leu	Phe	Val	Ala	Phe	Ser	
		195				200						205				
gtg	gct	ggc	ttt	gat	atg	att	gtc	att	ggt	atg	tca	tac	gtg	atg	att	672
Val	Ala	Gly	Phe	Asp	Met	Ile	Val	Ile	Gly	Met	Ser	Tyr	Val	Met	Ile	
		210				215					220					
ttg	aga	gct	gtg	ctt	cag	ttg	ccc	tca	ggt	gaa	gcc	cgc	ctc	aaa	gct	720

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Leu Arg Ala Val Leu Gln Leu Pro Ser Gly Glu Ala Arg Leu Lys Ala  
 225 230 235 240  
 ttt agc aca cgt gcc tcc cat atc tgt gtc atc ttg gct ctt tat atc 768  
 Phe Ser Thr Arg Ala Ser His Ile Cys Val Ile Leu Ala Leu Tyr Ile  
 245 250 255  
 cca gcc ctt ttt tct ttc ctc acc tac cgc ttt ggc cat gat gtg ccc 816  
 Pro Ala Leu Phe Ser Phe Leu Thr Tyr Arg Phe Gly His Asp Val Pro  
 260 265 270  
 cga gtt gta cac atc ctg ttt gct aat ctc tat cta ctg ata cct ccc 864  
 Arg Val Val His Ile Leu Phe Ala Asn Leu Tyr Leu Leu Ile Pro Pro  
 275 280 285  
 atg ctc aac ccc atc att tat gga gtt aga acc aaa cag atc ggg gac 912  
 Met Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Gly Asp  
 290 295 300  
 agg gtt atc caa gga tgt tgt gga aac atc ccc tga 948  
 Arg Val Ile Gln Gly Cys Cys Gly Asn Ile Pro  
 305 310 315

<210> 446  
 <211> 315  
 <212> PRT  
 <213> Homo Sapiens

<400> 446

Met Val Leu Ala Ser Gly Asn Ser Ser Ser His Pro Val Ser Phe Ile  
 1 5 10 15

Leu Leu Gly Ile Pro Gly Leu Glu Ser Phe Gln Leu Trp Ile Ala Phe  
 20 25 30

Pro Phe Cys Ala Thr Tyr Ala Val Ala Val Val Gly Asn Ile Thr Leu  
 35 40 45

Leu His Val Ile Arg Ile Asp His Thr Leu His Glu Pro Met Tyr Leu  
 50 55 60

Phe Leu Ala Met Leu Ala Ile Thr Asp Leu Val Leu Ser Ser Ser Thr  
 65 70 75 80

Gln Pro Lys Met Leu Ala Ile Phe Trp Phe His Ala His Glu Ile Gln  
 85 90 95

Tyr His Ala Cys Leu Ile Gln Val Phe Phe Ile His Ala Phe Ser Ser  
 100 105 110

Val Glu Ser Gly Val Leu Met Ala Met Ala Leu Asp Cys Tyr Val Ala  
 115 120 125



Thr Cys Phe Pro Leu Arg His Ser Ser Ile Leu Thr Pro Ser Val Val  
 130 135 140

Ile Lys Leu Gly Thr Ile Val Met Leu Arg Gly Leu Leu Trp Val Ser  
 145 150 155 160

Pro Phe Cys Phe Met Val Ser Arg Met Pro Phe Cys Gln His Gln Ala  
 165 170 175

Ile Pro Gln Ser Tyr Cys Glu His Met Ala Val Leu Lys Leu Val Cys  
 180 185 190

Ala Asp Thr Ser Ile Ser Arg Gly Tyr Gly Leu Phe Val Ala Phe Ser  
 195 200 205

Val Ala Gly Phe Asp Met Ile Val Ile Gly Met Ser Tyr Val Met Ile  
 210 215 220

Leu Arg Ala Val Leu Gln Leu Pro Ser Gly Glu Ala Arg Leu Lys Ala  
 225 230 235 240

Phe Ser Thr Arg Ala Ser His Ile Cys Val Ile Leu Ala Leu Tyr Ile  
 245 250 255

Pro Ala Leu Phe Ser Phe Leu Thr Tyr Arg Phe Gly His Asp Val Pro  
 260 265 270

Arg Val Val His Ile Leu Phe Ala Asn Leu Tyr Leu Leu Ile Pro Pro  
 275 280 285

Met Leu Asn Pro Ile Ile Tyr Gly Val Arg Thr Lys Gln Ile Gly Asp  
 290 295 300

Arg Val Ile Gln Gly Cys Cys Gly Asn Ile Pro  
 305 310 315

<210> 447  
 <211> 945  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (942)  
 <223>

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<400> 447  
 atg acc ctg gga tcc ctg gga aac agc agc agc agc gtt tct gct acc 48  
 Met Thr Leu Gly Ser Leu Gly Asn Ser Ser Ser Val Ser Ala Thr  
 1 5 10 15  
 ttc ctg ctg agt ggc atc cct ggg ctg gag cgc atg cac atc tgg atc 96  
 Phe Leu Leu Ser Gly Ile Pro Gly Leu Glu Arg Met His Ile Trp Ile  
 20 25 30  
 tcc atc cca ctg tgc ttc atg tat ctg gtt tcc atc ccg ggc aac tgc 144  
 Ser Ile Pro Leu Cys Phe Met Tyr Leu Val Ser Ile Pro Gly Asn Cys  
 35 40 45  
 aca att ctt ttt atc att aaa aca gag cgc tca ctt cat gaa cct atg 192  
 Thr Ile Leu Phe Ile Ile Lys Thr Glu Arg Ser Leu His Glu Pro Met  
 50 55 60  
 tat ctc ttc ctg tcc atg ctg gct ctg att gac ctg ggt ctc tcc ctt 240  
 Tyr Leu Phe Leu Ser Met Leu Ala Leu Ile Asp Leu Gly Leu Ser Leu  
 65 70 75 80  
 tgc act ctc cct aca gtc ctg ggc atc ttt tgg gtt gga gca cga gaa 288  
 Cys Thr Leu Pro Thr Val Leu Gly Ile Phe Trp Val Gly Ala Arg Glu  
 85 90 95  
 att agc cat gat gcc tgc ttt gct cag ctc ttt ttc att cac tgc ttc 336  
 Ile Ser His Asp Ala Cys Phe Ala Gln Leu Phe Phe Ile His Cys Phe  
 100 105 110  
 tcc ttc ctc gag tcc tct gtg cta ctg tct atg gcc ttt gac cgc ttt 384  
 Ser Phe Leu Glu Ser Ser Val Leu Leu Ser Met Ala Phe Asp Arg Phe  
 115 120 125  
 gtg gct atc tgc cac ccc ttg cac tat gtt tcc att ctc acc aac aca 432  
 Val Ala Ile Cys His Pro Leu His Tyr Val Ser Ile Leu Thr Asn Thr  
 130 135 140  
 gtc att ggc agg att ggc ctg gtc tct ctg ggt cgt agt gta gca ctc 480  
 Val Ile Gly Arg Ile Gly Leu Val Ser Leu Gly Arg Ser Val Ala Leu  
 145 150 155 160  
 att ttt cca tta cct ttt atg ctc aaa aga ttc ccc tat tgt ggc tcc 528  
 Ile Phe Pro Leu Pro Phe Met Leu Lys Arg Phe Pro Tyr Cys Gly Ser  
 165 170 175  
 cca gtt ctc tca cat tct tat tgt ctc cac caa gaa gtg atg aaa ttg 576  
 Pro Val Leu Ser His Ser Tyr Cys Leu His Gln Glu Val Met Lys Leu  
 180 185 190  
 gcc tgt gcc gac atg aag gcc aac agc atc tac ggc atg ttt gtc atc 624  
 Ala Cys Ala Asp Met Lys Ala Asn Ser Ile Tyr Gly Met Phe Val Ile  
 195 200 205  
 gtc tct aca gtg ggt ata gac tca ctg ctc atc ctc ttc tct tat gct 672  
 Val Ser Thr Val Gly Ile Asp Ser Leu Leu Ile Leu Phe Ser Tyr Ala  
 210 215 220  
 ctg atc ctg cgc acc gtg ctg tcc atc gcc tcc agg gct gag aga ttc 720  
 Leu Ile Leu Arg Thr Val Leu Ser Ile Ala Ser Arg Ala Glu Arg Phe  
 225 230 235 240

aag gcc ctt aac acc tgt gtt tcc cac atc tgt gct gtg ctg ctc ttc 768  
 Lys Ala Leu Asn Thr Cys Val Ser His Ile Cys Ala Val Leu Leu Phe  
 245 250 255  
 tac act ccc atg att ggc ctc tct gtc atc cat cgc ttt gga aag cag 816  
 Tyr Thr Pro Met Ile Gly Leu Ser Val Ile His Arg Phe Gly Lys Gln  
 260 265 270  
 gca ccc cac ctg gtc cag gtg gtc atg ggt ttc atg tat ctt ctc ttt 864  
 Ala Pro His Leu Val Gln Val Val Met Gly Phe Met Tyr Leu Leu Phe  
 275 280 285  
 cct cct gtg atg aat ccc att gtc tac agt gtg aag acc aaa cag atc 912  
 Pro Pro Val Met Asn Pro Ile Val Tyr Ser Val Lys Thr Lys Gln Ile  
 290 295 300  
 cgg gat cga gtg acg cat gcc ttt tgt tac taa 945  
 Arg Asp Arg Val Thr His Ala Phe Cys Tyr  
 305 310

<210> 448  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 448

Met Thr Leu Gly Ser Leu Gly Asn Ser Ser Ser Ser Val Ser Ala Thr  
 1 5 10 15  
 Phe Leu Leu Ser Gly Ile Pro Gly Leu Glu Arg Met His Ile Trp Ile  
 20 25 30  
 Ser Ile Pro Leu Cys Phe Met Tyr Leu Val Ser Ile Pro Gly Asn Cys  
 35 40 45  
 Thr Ile Leu Phe Ile Ile Lys Thr Glu Arg Ser Leu His Glu Pro Met  
 50 55 60  
 Tyr Leu Phe Leu Ser Met Leu Ala Leu Ile Asp Leu Gly Leu Ser Leu  
 65 70 75 80  
 Cys Thr Leu Pro Thr Val Leu Gly Ile Phe Trp Val Gly Ala Arg Glu  
 85 90 95  
 Ile Ser His Asp Ala Cys Phe Ala Gln Leu Phe Phe Ile His Cys Phe  
 100 105 110  
 Ser Phe Leu Glu Ser Ser Val Leu Leu Ser Met Ala Phe Asp Arg Phe  
 115 120 125  
 Val Ala Ile Cys His Pro Leu His Tyr Val Ser Ile Leu Thr Asn Thr

135

140

Val Ile Gly Arg Ile Gly Leu Val Ser Leu Gly Arg Ser Val Ala Leu  
145 150 155 160

Ile Phe Pro Leu Pro Phe Met Leu Lys Arg Phe Pro Tyr Cys Gly Ser  
165 170 175

Pro Val Leu Ser His Ser Tyr Cys Leu His Gln Glu Val Met Lys Leu  
180 185 190

Ala Cys Ala Asp Met Lys Ala Asn Ser Ile Tyr Gly Met Phe Val Ile  
195 200 205

Val Ser Thr Val Gly Ile Asp Ser Leu Leu Ile Leu Phe Ser Tyr Ala  
210 215 220

Leu Ile Leu Arg Thr Val Leu Ser Ile Ala Ser Arg Ala Glu Arg Phe  
225 230 235 240

Lys Ala Leu Asn Thr Cys Val Ser His Ile Cys Ala Val Leu Leu Phe  
245 250 255

Tyr Thr Pro Met Ile Gly Leu Ser Val Ile His Arg Phe Gly Lys Gln  
260 265 270

Ala Pro His Leu Val Gln Val Val Met Gly Phe Met Tyr Leu Leu Phe  
275 280 285

Pro Pro Val Met Asn Pro Ile Val Tyr Ser Val Lys Thr Lys Gln Ile  
290 295 300

Arg Asp Arg Val Thr His Ala Phe Cys Tyr  
305 310

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<210> 449
<211> 942
<212> DNA
<213> Homo Sapiens
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<220>
<221> CDS
<222> (1) .. (939)
<223>
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<400> 449  
atg tcc att atc aac aca tca tat gtt gaa atc acc acc ttc ttc ttg  
Met Ser Ile Ile Asn Thr Ser Tyr Val Glu Ile Thr Thr Phe Phe Leu

1	5	10	15	
gtt ggg atg cca ggg cta gaa tat gca cac atc tgg atc tct atc ccc				96
Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro	20	25	30	
atc tgc agc atg tat ctt att gct att cta gga aat tgc acc att ctt				144
Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Cys Thr Ile Leu	35	40	45	
ttt atc atc aag aca gag ccc tcc ttg cat gag ccc atg tac tat ttt				192
Phe Ile Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe	50	55	60	
ctt tcc atg ttg gct atg tca gac ttg ggt ttg tct tta tca tct ctg				240
Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu	65	70	75	80
ccc act gtg tta agc atc ttc ctg ttc aat gct cct gaa att tca tcc				288
Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Ile Ser Ser	85	90	95	
aat gcc tgc ttt gcc cag gaa ttc ttc att cat gga ttc tca gta ctg				336
Asn Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu	100	105	110	
gag tcc tca gtc ctc ctg atc atg tca ttt gat aga ttc cta gcc atc				384
Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile	115	120	125	
cac aac cct ctg aga tac acc tca atc ctg aca act gtc aga gtt gcc				432
His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala	130	135	140	
caa ata ggg ata gta ttc tcc ttt aag agc atg ctc ctg gtt ctt ccc				480
Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro	145	150	155	160
ttc cct ttc act tta aga aac ttg aga tat tgc aag aaa aac caa tta				528
Phe Pro Phe Thr Leu Arg Asn Leu Arg Tyr Cys Lys Lys Asn Gln Leu	165	170	175	
tcc cat tcc tac tgt ctc cac cag gat gtc atg aag ttg gcc tgt tct				576
Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ser	180	185	190	
gac aac aga att gat gtt atc tat ggc ttt ttt gga gca ctc tgc ctt				624
Asp Asn Arg Ile Asp Val Ile Tyr Gly Phe Phe Gly Ala Leu Cys Leu	195	200	205	
atg gta gac ttt att ctc att gct gtg tct tac acc ctg atc ctc aag				672
Met Val Asp Phe Ile Leu Ile Ala Val Ser Tyr Thr Leu Ile Leu Lys	210	215	220	
act gta ccg gga att gca tcc aaa aag gag cag ctt aag gct ctc aat				720
Thr Val Pro Gly Ile Ala Ser Lys Lys Glu Gln Leu Lys Ala Leu Asn	225	230	235	240
act tgt gtt tca cac atc tgt gca gtg atc atc ttc tac ctg ccc atc				768
Thr Cys Val Ser His Ile Cys Ala Val Ile Ile Phe Tyr Leu Pro Ile	245	250	255	

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atc aac ctg gcc gtt gtc cac cgc ttt gcc cgg cat gtc tct ccc ctc 816  
 Ile Asn Leu Ala Val Val His Arg Phe Ala Arg His Val Ser Pro Leu  
 260 265 270

att aat gtt ctc atg gca aat gtt ctc cta ctt gta cct cca ctg atg 864  
 Ile Asn Val Leu Met Ala Asn Val Leu Leu Leu Val Pro Pro Leu Met  
 275 280 285

aac cca att gtt tat tgt gta aaa act aaa cag att aga gtg aga gtt 912  
 Asn Pro Ile Val Tyr Cys Val Lys Thr Lys Gln Ile Arg Val Arg Val  
 290 295 300

gta gca aaa ttg tgt caa cgg aag att taa 942  
 Val Ala Lys Leu Cys Gln Arg Lys Ile  
 305 310

<210> 450  
 <211> 313  
 <212> PRT  
 <213> Homo Sapiens

<400> 450  
 Met Ser Ile Ile Asn Thr Ser Tyr Val Glu Ile Thr Thr Phe Phe Leu  
 1 5 10 15

Val Gly Met Pro Gly Leu Glu Tyr Ala His Ile Trp Ile Ser Ile Pro  
 20 25 30

Ile Cys Ser Met Tyr Leu Ile Ala Ile Leu Gly Asn Cys Thr Ile Leu  
 35 40 45

Phe Ile Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe  
 50 55 60

Leu Ser Met Leu Ala Met Ser Asp Leu Gly Leu Ser Leu Ser Ser Leu  
 65 70 75 80

Pro Thr Val Leu Ser Ile Phe Leu Phe Asn Ala Pro Glu Ile Ser Ser  
 85 90 95

Asn Ala Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Ser Val Leu  
 100 105 110

Glu Ser Ser Val Leu Leu Ile Met Ser Phe Asp Arg Phe Leu Ala Ile  
 115 120 125

His Asn Pro Leu Arg Tyr Thr Ser Ile Leu Thr Thr Val Arg Val Ala  
 130 135 140

Gln Ile Gly Ile Val Phe Ser Phe Lys Ser Met Leu Leu Val Leu Pro  
 145 150 155 160

Phe Pro Phe Thr Leu Arg Asn Leu Arg Tyr Cys Lys Lys Asn Gln Leu  
 165 170 175

Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Ser  
 180 185 190

Asp Asn Arg Ile Asp Val Ile Tyr Gly Phe Phe Gly Ala Leu Cys Leu  
 195 200 205

Met Val Asp Phe Ile Leu Ile Ala Val Ser Tyr Thr Leu Ile Leu Lys  
 210 215 220

Thr Val Pro Gly Ile Ala Ser Lys Lys Glu Gln Leu Lys Ala Leu Asn  
 225 230 235 240

Thr Cys Val Ser His Ile Cys Ala Val Ile Ile Phe Tyr Leu Pro Ile  
 245 250 255

Ile Asn Leu Ala Val Val His Arg Phe Ala Arg His Val Ser Pro Leu  
 260 265 270

Ile Asn Val Leu Met Ala Asn Val Leu Leu Leu Val Pro Pro Leu Met  
 275 280 285

Asn Pro Ile Val Tyr Cys Val Lys Thr Lys Gln Ile Arg Val Arg Val  
 290 295 300

Val Ala Lys Leu Cys Gln Arg Lys Ile  
 305 310

<210> 451  
 <211> 966  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(963)  
 <223>

<400> 451  
 atg aca att ctt ctt aat agc agc ctc caa aga gcc act ttc ttc ctg 48  
 Met Thr Ile Leu Leu Asn Ser Ser Leu Gln Arg Ala Thr Phe Phe Leu  
 1 5 10 15  
 acg ggc ttc caa ggt cta gaa ggt ctc cat ggc tgg atc tct att ccc 96

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Thr Gly Phe Gln Gly Leu Glu Gly Leu His Gly Trp Ile Ser Ile Pro  
 20 25 30

ttc tgc ttc atc tac ctg aca gtt atc ttg ggg aac ctc acc att ctc 144  
 Phe Cys Phe Ile Tyr Leu Thr Val Ile Leu Gly Asn Leu Thr Ile Leu  
 35 40 45

cac gtc att tgt act gat gcc act ctc cat gga ccc atg tac tat ttc 192  
 His Val Ile Cys Thr Asp Ala Thr Leu His Gly Pro Met Tyr Tyr Phe  
 50 55 60

ttg ggc atg cta gct gtc aca gac tta ggc ctt tgc ctt tcc aca ctg 240  
 Leu Gly Met Leu Ala Val Thr Asp Leu Gly Leu Cys Leu Ser Thr Leu  
 65 70 75 80

ccc act gtg ctg ggc att ttc tgg ttt gat acc aga gag att ggc atc 288  
 Pro Thr Val Leu Gly Ile Phe Trp Phe Asp Thr Arg Glu Ile Gly Ile  
 85 90 95

cct gcc tgt ttc act cag ctc ttc ttc atc cac acc ttg tct tca atg 336  
 Pro Ala Cys Phe Thr Gln Leu Phe Phe Ile His Thr Leu Ser Ser Met  
 100 105 110

gag tca tca gtt ctg tta tcc atg tcc att gac cgc tcc gtg gcc gtc 384  
 Glu Ser Ser Val Leu Leu Ser Met Ser Ile Asp Arg Ser Val Ala Val  
 115 120 125

tgc aac cca ctg cat gac tcc acc gtc ctg aca cct gca tgt att gtc 432  
 Cys Asn Pro Leu His Asp Ser Thr Val Leu Thr Pro Ala Cys Ile Val  
 130 135 140

aag atg ggg cta agc tca gtg ctt aga agt gct ctc ctc atc ctc ccc 480  
 Lys Met Gly Leu Ser Ser Val Leu Arg Ser Ala Leu Leu Ile Leu Pro  
 145 150 155 160

ttg cca ttc ctc ctg aag cgc ttc caa tac tgc cac tcc cat gtg ctg 528  
 Leu Pro Phe Leu Leu Lys Arg Phe Gln Tyr Cys His Ser His Val Leu  
 165 170 175

gct cat gct tat tgt ctt cac ctg gag atc atg aag ctg gcc tgc tct 576  
 Ala His Ala Tyr Cys Leu His Leu Glu Ile Met Lys Leu Ala Cys Ser  
 180 185 190

agc atc att gtc aat cac atc tat ggg ctc ttt gtt gtg gcc tgc acc 624  
 Ser Ile Ile Val Asn His Ile Tyr Gly Leu Phe Val Val Ala Cys Thr  
 195 200 205

gtg ggt gtg gac tcc ctg ctc atc ttt ctc tca tac gcc ctc atc ctt 672  
 Val Gly Val Asp Ser Leu Leu Ile Phe Leu Ser Tyr Ala Leu Ile Leu  
 210 215 220

cgc acc gtg ctc agc att gcc tcc cac cag gag cga ctc cga gcc ctc 720  
 Arg Thr Val Leu Ser Ile Ala Ser His Gln Glu Arg Leu Arg Ala Leu  
 225 230 235 240

aac acc tgt gtc tct cat atc tgt gct gta ctg ctc ttc tac atc ccc 768  
 Asn Thr Cys Val Ser His Ile Cys Ala Val Leu Leu Phe Tyr Ile Pro  
 245 250 255

atg att ggc ttg tct ctt gtg cat cgc ttt ggt gaa cat ctg ccc cgc 816  
 Met Ile Gly Leu Ser Leu Val His Arg Phe Gly Glu His Leu Pro Arg



260	265	270	
gtt gta cac ctc ttc atg tcc tat	gtg tat ctg ctg gta cca ccc ctt		864
Val Val His Leu Phe Met Ser Tyr	Val Tyr Leu Leu Val Pro Pro Leu		
275	280	285	
atg aac ccc atc atc tac agc atc aag acc aag	caa att cgc cag cgc		912
Met Asn Pro Ile Ile Tyr Ser Ile Lys Thr Lys	Gln Ile Arg Gln Arg		
290	295	300	
atc att aag aag ttt cag ttt ata aag tca ctt	agg tgt ttt tgg aag		960
Ile Ile Lys Lys Phe Gln Phe Ile Lys Ser Leu	Arg Cys Phe Trp Lys		
305	310	315	320
gat taa			966
Asp			

<210> 452  
 <211> 321  
 <212> PRT  
 <213> Homo Sapiens  
 <400> 452

Met Thr Ile Leu Leu Asn Ser Ser Leu Gln Arg Ala Thr Phe Phe Leu
1 5 10 15

Thr Gly Phe Gln Gly Leu Glu Gly Leu His Gly Trp Ile Ser Ile Pro
20 25 30

Phe Cys Phe Ile Tyr Leu Thr Val Ile Leu Gly Asn Leu Thr Ile Leu
35 40 45

His Val Ile Cys Thr Asp Ala Thr Leu His Gly Pro Met Tyr Tyr Phe
50 55 60

Leu Gly Met Leu Ala Val Thr Asp Leu Gly Leu Cys Leu Ser Thr Leu
65 70 75 80

Pro Thr Val Leu Gly Ile Phe Trp Phe Asp Thr Arg Glu Ile Gly Ile
85 90 95

Pro Ala Cys Phe Thr Gln Leu Phe Phe Ile His Thr Leu Ser Ser Met
100 105 110

Glu Ser Ser Val Leu Leu Ser Met Ser Ile Asp Arg Ser Val Ala Val
115 120 125

Cys Asn Pro Leu His Asp Ser Thr Val Leu Thr Pro Ala Cys Ile Val
130 135 140

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Lys Met Gly Leu Ser Ser Val Leu Arg Ser Ala Leu Leu Ile Leu Pro  
 145 150 155 160

Leu Pro Phe Leu Leu Lys Arg Phe Gln Tyr Cys His Ser His Val Leu  
 165 170 175

Ala His Ala Tyr Cys Leu His Leu Glu Ile Met Lys Leu Ala Cys Ser  
 180 185 190

Ser Ile Ile Val Asn His Ile Tyr Gly Leu Phe Val Val Ala Cys Thr  
 195 200 205

Val Gly Val Asp Ser Leu Leu Ile Phe Leu Ser Tyr Ala Leu Ile Leu  
 210 215 220

Arg Thr Val Leu Ser Ile Ala Ser His Gln Glu Arg Leu Arg Ala Leu  
 225 230 235 240

Asn Thr Cys Val Ser His Ile Cys Ala Val Leu Leu Phe Tyr Ile Pro  
 245 250 255

Met Ile Gly Leu Ser Leu Val His Arg Phe Gly Glu His Leu Pro Arg  
 260 265 270

Val Val His Leu Phe Met Ser Tyr Val Tyr Leu Leu Val Pro Pro Leu  
 275 280 285

Met Asn Pro Ile Ile Tyr Ser Ile Lys Thr Lys Gln Ile Arg Gln Arg  
 290 295 300

Ile Ile Lys Lys Phe Gln Phe Ile Lys Ser Leu Arg Cys Phe Trp Lys  
 305 310 315 320

Asp

<210> 453  
 <211> 909  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (906)  
 <223>

<400> 453

atg acg aac ttg aat gca tca cag gcc aac cac cgt aac ttc att ctg	48
Met Thr Asn Leu Asn Ala Ser Gln Ala Asn His Arg Asn Phe Ile Leu	
1 5 10 15	
aca ggt atc cca gga acg cca gac aag aac cca tgg ttg gcc ttt ccc	96
Thr Gly Ile Pro Gly Thr Pro Asp Lys Asn Pro Trp Leu Ala Phe Pro	
20 25 30	
ctg gga ttt ctc tac aca ctc aca ctc ctg gga aat ggt acc atc cta	144
Leu Gly Phe Leu Tyr Thr Leu Thr Leu Leu Gly Asn Gly Thr Ile Leu	
35 40 45	
gct gtc atc aag gtg gag cca agt ctc cat gag ccc acg tat tac ttc	192
Ala Val Ile Lys Val Glu Pro Ser Leu His Glu Pro Thr Tyr Tyr Phe	
50 55 60	
ctt tct atc ttg gct ctc act gac gtt agt ctc tcc atg tcc acc ttg	240
Leu Ser Ile Leu Ala Leu Thr Asp Val Ser Leu Ser Met Ser Thr Leu	
65 70 75 80	
ccc tcc atg ctc agc atc tac tgg ttt aat gcc cct cag att gtt ttt	288
Pro Ser Met Leu Ser Ile Tyr Trp Phe Asn Ala Pro Gln Ile Val Phe	
85 90 95	
gat gca tgc atc atg cag atg ttc ttc atc cat gta ttt gga ata gta	336
Asp Ala Cys Ile Met Gln Met Phe Phe Ile His Val Phe Gly Ile Val	
100 105 110	
gaa tca gga gtc cta gtg tcc atg gcc ttt gac aga ttt gtg gcc atc	384
Glu Ser Gly Val Leu Val Ser Met Ala Phe Asp Arg Phe Val Ala Ile	
115 120 125	
cga aac cca tta cac tat gtt tcc atc ctc act cac gat gtt att cga	432
Arg Asn Pro Leu His Tyr Val Ser Ile Leu Thr His Asp Val Ile Arg	
130 135 140	
aag act gga ata tct gtc ctc acc cgg gca gtc tgt gtg gta ttc cct	480
Lys Thr Gly Ile Ser Val Leu Thr Arg Ala Val Cys Val Val Phe Pro	
145 150 155 160	
gtg ccc ttc ctt ata aag tgc cta ccc ttc tgc cat tcc aat gtc ttg	528
Val Pro Phe Leu Ile Lys Cys Leu Pro Phe Cys His Ser Asn Val Leu	
165 170 175	
tct cat tca tac tgt ctt cac caa aac atg atg cgg cta gct tgt gcc	576
Ser His Ser Tyr Cys Leu His Gln Asn Met Met Arg Leu Ala Cys Ala	
180 185 190	
agc acc cgc atc aac agc ctc tac ggc ctc atc gtc gtc atc ttc aca	624
Ser Thr Arg Ile Asn Ser Leu Tyr Gly Leu Ile Val Val Ile Phe Thr	
195 200 205	
ctg ggg ctc gat gtt ctc ctc act cta ctg tct tat gta ctc acc ctg	672
Leu Gly Leu Asp Val Leu Thr Leu Leu Ser Tyr Val Leu Thr Leu	
210 215 220	
aag act gtg ctg ggc att gtc tcc aga ggt gaa agg ctg aaa acc ctc	720
Lys Thr Val Leu Gly Ile Val Ser Arg Gly Glu Arg Leu Lys Thr Leu	
225 230 235 240	
agc aca tgc ctc tct cac atg tct acc gtg ctc ctc ttc tat gtt cct	768

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Ser Thr Cys Leu Ser His Met Ser Thr Val Leu Leu Phe Tyr Val Pro  
 245 250 255

ttt atg ggt gct gcc tcc atg atc cac aga ttt tgg gag cat tta tca 816  
 Phe Met Gly Ala Ala Ser Met Ile His Arg Phe Trp Glu His Leu Ser  
 260 265 270

cca gta gtg cac atg gtc atg gct gat ata tac cta ctg ctc ccg cct 864  
 Pro Val Val His Met Val Met Ala Asp Ile Tyr Leu Leu Leu Pro Pro  
 275 280 285

gtg cta aac ccc att gtc tac agt gtg aag acc aag caa att tga 909  
 Val Leu Asn Pro Ile Val Tyr Ser Val Lys Thr Lys Gln Ile  
 290 295 300

<210> 454  
 <211> 302  
 <212> PRT  
 <213> Homo Sapiens

<400> 454

Met Thr Asn Leu Asn Ala Ser Gln Ala Asn His Arg Asn Phe Ile Leu  
 1 5 10 15

Thr Gly Ile Pro Gly Thr Pro Asp Lys Asn Pro Trp Leu Ala Phe Pro  
 20 25 30

Leu Gly Phe Leu Tyr Thr Leu Thr Leu Leu Gly Asn Gly Thr Ile Leu  
 35 40 45

Ala Val Ile Lys Val Glu Pro Ser Leu His Glu Pro Thr Tyr Tyr Phe  
 50 55 60

Leu Ser Ile Leu Ala Leu Thr Asp Val Ser Leu Ser Met Ser Thr Leu  
 65 70 75 80

Pro Ser Met Leu Ser Ile Tyr Trp Phe Asn Ala Pro Gln Ile Val Phe  
 85 90 95

Asp Ala Cys Ile Met Gln Met Phe Phe Ile His Val Phe Gly Ile Val  
 100 105 110

Glu Ser Gly Val Leu Val Ser Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125

Arg Asn Pro Leu His Tyr Val Ser Ile Leu Thr His Asp Val Ile Arg  
 130 135 140

Lys Thr Gly Ile Ser Val Leu Thr Arg Ala Val Cys Val Val Phe Pro  
 145 150 155 160

Val Pro Phe Leu Ile Lys Cys Leu Pro Phe Cys His Ser Asn Val Leu  
165 170 175

Ser His Ser Tyr Cys Leu His Gln Asn Met Met Arg Leu Ala Cys Ala  
180 185 190

Ser Thr Arg Ile Asn Ser Leu Tyr Gly Leu Ile Val Val Ile Phe Thr  
195 200 205

Leu Gly Leu Asp Val Leu Leu Thr Leu Leu Ser Tyr Val Leu Thr Leu  
210 215 220

Lys Thr Val Leu Gly Ile Val Ser Arg Gly Glu Arg Leu Lys Thr Leu  
225 230 235 240

Ser Thr Cys Leu Ser His Met Ser Thr Val Leu Leu Phe Tyr Val Pro  
245 250 255

Phe Met Gly Ala Ala Ser Met Ile His Arg Phe Trp Glu His Leu Ser  
260 265 270

Pro Val Val His Met Val Met Ala Asp Ile Tyr Leu Leu Leu Pro Pro  
275 280 285

Val Leu Asn Pro Ile Val Tyr Ser Val Lys Thr Lys Gln Ile  
290 295 300

<210> 455  
<211> 939  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(936)  
<223>

<400> 455  
atg tct gtt ctc aat aac tcc gaa gtc aag ctt ttc ctt ctg att ggg 48  
Met Ser Val Leu Asn Asn Ser Glu Val Lys Leu Phe Leu Leu Ile Gly  
1 5 10 15  
atc cca gga ctg gaa cat gcc cac att tgg ttc tcc atc ccc att tgc 96  
Ile Pro Gly Leu Glu His Ala His Ile Trp Phe Ser Ile Pro Ile Cys  
20 25 30  
ctc atg tac ctg ctt gcc atc atg ggc aac tgc acc att ctc ttt att 144  
Leu Met Tyr Leu Leu Ala Ile Met Gly Asn Cys Thr Ile Leu Phe Ile  
35 40 45

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ata aag aca gag ccc tgc ctt cat gag ccc atg tat tat ttc ctt gcc Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe Leu Ala 50 55 60	192
atg ttg gct gtc tct gac atg ggc ctg tcc ctc tcc tcc ctt cct acc Met Leu Ala Val Ser Asp Met Gly Leu Ser Leu Ser Ser Leu Pro Thr 65 70 75 80	240
atg ttg agg gtc ttc ttg ttc aat gcc atg gga att tca cct aat gcc Met Leu Arg Val Phe Leu Phe Asn Ala Met Gly Ile Ser Pro Asn Ala 85 90 95	288
tgc ttt gct caa gaa ttc ttc att cat gga ttc act gtc atg gaa tcc Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Thr Val Met Glu Ser 100 105 110	336
tca gta ctt cta att atg tct ttg gac cgc ttt ctt gcc att cac aat Ser Val Leu Leu Ile Met Ser Leu Asp Arg Phe Leu Ala Ile His Asn 115 120 125	384
ccc tta aga tac agt tct atc ctc act agc aac agg gtt gct aaa atg Pro Leu Arg Tyr Ser Ser Ile Leu Thr Ser Asn Arg Val Ala Lys Met 130 135 140	432
gga ctt att tta gcc att agg agc att ctc tta gtg att cca ttt ccc Gly Leu Ile Leu Ala Ile Arg Ser Ile Leu Leu Val Ile Pro Phe Pro 145 150 155 160	480
ttc acc tta agg aga tta aaa tat tgt caa aag aat ctt ctt tct cac Phe Thr Leu Arg Arg Leu Lys Tyr Cys Gln Lys Asn Leu Leu Ser His 165 170 175	528
tca tac tgt ctt cat cag gat acc atg aag ctg gcc tgc tct gac aac Ser Tyr Cys Leu His Gln Asp Thr Met Lys Leu Ala Cys Ser Asp Asn 180 185 190	576
aag acc aat gtc atc tat ggc ttc ttc att gct ctc tgt act atg ctg Lys Thr Asn Val Ile Tyr Gly Phe Phe Ile Ala Leu Cys Thr Met Leu 195 200 205	624
gac ttg gca ctg att gtt ttg tct tat gtg ctg atc ttg aag act ata Asp Leu Ala Leu Ile Val Leu Ser Tyr Val Leu Ile Leu Lys Thr Ile 210 215 220	672
ctc agc att gca tct ttg gca gag agg ctt aag gcc cta aat acc tgt Leu Ser Ile Ala Ser Leu Ala Glu Arg Leu Lys Ala Leu Asn Thr Cys 225 230 235 240	720
gtc tcc cac atc tgt gct gtg ctc acc ttc tat gtg ccc atc atc acc Val Ser His Ile Cys Ala Val Leu Thr Phe Tyr Val Pro Ile Ile Thr 245 250 255	768
ctg gct gcc atg cat cac ttt gcc aag cac aaa agc cct ctt gtt gtg Leu Ala Ala Met His His Phe Ala Lys His Lys Ser Pro Leu Val Val 260 265 270	816
atc ctt att gca gat atg ttc ttg ttg gtg ccg ccc ctt atg aac ccc Ile Leu Ile Ala Asp Met Phe Leu Leu Val Pro Pro Leu Met Asn Pro 275 280 285	864

att gtg tac tgt gta aag act cga caa atc tgg gag aag atc ttg ggg 912  
 Ile Val Tyr Cys Val Lys Thr Arg Gln Ile Trp Glu Lys Ile Leu Gly  
 290 295 300

aag ttg ctt aat gta tgt ggg aga taa 939  
 Lys Leu Leu Asn Val Cys Gly Arg  
 305 310

<210> 456  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 456

Met Ser Val Leu Asn Asn Ser Glu Val Lys Leu Phe Leu Leu Ile Gly  
 1 5 10 15

Ile Pro Gly Leu Glu His Ala His Ile Trp Phe Ser Ile Pro Ile Cys  
 20 25 30

Leu Met Tyr Leu Leu Ala Ile Met Gly Asn Cys Thr Ile Leu Phe Ile  
 35 40 45

Ile Lys Thr Glu Pro Ser Leu His Glu Pro Met Tyr Tyr Phe Leu Ala  
 50 55 60

Met Leu Ala Val Ser Asp Met Gly Leu Ser Leu Ser Ser Leu Pro Thr  
 65 70 75 80

Met Leu Arg Val Phe Leu Phe Asn Ala Met Gly Ile Ser Pro Asn Ala  
 85 90 95

Cys Phe Ala Gln Glu Phe Phe Ile His Gly Phe Thr Val Met Glu Ser  
 100 105 110

Ser Val Leu Leu Ile Met Ser Leu Asp Arg Phe Leu Ala Ile His Asn  
 115 120 125

Pro Leu Arg Tyr Ser Ser Ile Leu Thr Ser Asn Arg Val Ala Lys Met  
 130 135 140

Gly Leu Ile Leu Ala Ile Arg Ser Ile Leu Leu Val Ile Pro Phe Pro  
 145 150 155 160

Phe Thr Leu Arg Arg Leu Lys Tyr Cys Gln Lys Asn Leu Leu Ser His  
 165 170 175

Ser Tyr Cys Leu His Gln Asp Thr Met Lys Leu Ala Cys Ser Asp Asn

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180 185 190  
 Lys Thr Asn Val Ile Tyr Gly Phe Phe Ile Ala Leu Cys Thr Met Leu  
 195 200 205  
 Asp Leu Ala Leu Ile Val Leu Ser Tyr Val Leu Ile Leu Lys Thr Ile  
 210 215 220  
 Leu Ser Ile Ala Ser Leu Ala Glu Arg Leu Lys Ala Leu Asn Thr Cys  
 225 230 235 240  
 Val Ser His Ile Cys Ala Val Leu Thr Phe Tyr Val Pro Ile Ile Thr  
 245 250 255  
 Leu Ala Ala Met His His Phe Ala Lys His Lys Ser Pro Leu Val Val  
 260 265 270  
 Ile Leu Ile Ala Asp Met Phe Leu Leu Val Pro Pro Leu Met Asn Pro  
 275 280 285  
 Ile Val Tyr Cys Val Lys Thr Arg Gln Ile Trp Glu Lys Ile Leu Gly  
 290 295 300  
 Lys Leu Leu Asn Val Cys Gly Arg  
 305 310  
 <210> 457  
 <211> 885  
 <212> DNA  
 <213> Homo Sapiens  
 <220>  
 <221> CDS  
 <222> (1)..(882)  
 <223>  
 <400> 457  
 atg cca cac ctc agc aac acc aca tct gag ttc cca atc ttc ctc cta 48  
 Met Pro His Leu Ser Asn Thr Thr Ser Glu Phe Pro Ile Phe Leu Leu 15  
 1 5 10  
 aca ggc ttc cct ggg ctg gag gcc ttc cac atc tgg atc tca att ccc 96  
 Thr Gly Phe Pro Gly Leu Glu Ala Phe His Ile Trp Ile Ser Ile Pro 30  
 20 25  
 ttc ttc ctt ctg agc aca gtt gct ctc tta ggg aac agc atg atc cta 144  
 Phe Phe Leu Leu Ser Thr Val Ala Leu Leu Gly Asn Ser Met Ile Leu 45  
 35 40  
 ttg gtt gtt att ctg gag cca aac ctc cat gaa ccc atg tac tgt ttt 192  
 Leu Val Val Ile Leu Glu Pro Asn Leu His Glu Pro Met Tyr Cys Phe



50	55	60	
ctc ttc atg ctg tct gcc gct gac ctg ggg ctg acc ctc tcc aca atg			240
Leu Phe Met Leu Ser Ala Ala Asp Leu Gly Leu Thr Leu Ser Thr Met			
65	70	75	80
ccc acg acc ctc agt gtc ctc tgg ttc agt gca cgt gaa atc atc ctc			288
Pro Thr Thr Leu Ser Val Leu Trp Phe Ser Ala Arg Glu Ile Ile Leu			
	85	90	95
aat gca tgt atc atc cag ctc ttt ttc ctc cac agc tct ggc ttt atg			336
Asn Ala Cys Ile Ile Gln Leu Phe Phe Leu His Ser Ser Gly Phe Met			
	100	105	110
gaa tcc tca gta ctg atg gcc atg gct ttt gac cgc ttt gtt gcc att			384
Glu Ser Ser Val Leu Met Ala Met Ala Phe Asp Arg Phe Val Ala Ile			
	115	120	125
tgc aga ccc ctc aga tat gct acc atc ctg aca gac tcc aga att cta			432
Cys Arg Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asp Ser Arg Ile Leu			
	130	135	140
aag att ggt gta gca ata gtc cta aga aca ttg atc agc ctc tct cca			480
Lys Ile Gly Val Ala Ile Val Leu Arg Thr Leu Ile Ser Leu Ser Pro			
	145	150	155
tcc ctc ttt ctc att aag aga ctg tca ttt tgc aaa gtc aat gtc ctt			528
Ser Leu Phe Leu Ile Lys Arg Leu Ser Phe Cys Lys Val Asn Val Leu			
	165	170	175
tcc cat tct tac tgc ttc cac cct gat gcg ctt aaa gtt gca tgt tct			576
Ser His Ser Tyr Cys Phe His Pro Asp Ala Leu Lys Val Ala Cys Ser			
	180	185	190
gat tca agg atg aac agc tat gga ggc tta gct gtt ctc att ctg gtc			624
Asp Ser Arg Met Asn Ser Tyr Gly Gly Leu Ala Val Leu Ile Leu Val			
	195	200	205
acc ggg gtt ggt aca cca tgt gtt gcg ctt tcc tac atc ctg ata atc			672
Thr Gly Val Gly Thr Pro Cys Val Ala Leu Ser Tyr Ile Leu Ile Ile			
	210	215	220
cac tct gta cta aac atc atc tct tca gag gga cgg agg aag gcc ttc			720
His Ser Val Leu Asn Ile Ile Ser Ser Glu Gly Arg Arg Lys Ala Phe			
	225	230	235
gac act tgt gga tct cac att ggg gca gtt gca gtc ttc tac att ccc			768
Asp Thr Cys Gly Ser His Ile Gly Ala Val Ala Val Phe Tyr Ile Pro			
	245	250	255
tgg gtt gtt ctt tca gtt gtc cac aga ttt ttc cac aag gct tca cca			816
Trp Val Val Leu Ser Val Val His Arg Phe Phe His Lys Ala Ser Pro			
	260	265	270
ata tgt cca ccc act att gtc caa cat cta ttt cct tgg ccc ctc tgc			864
Ile Cys Pro Pro Thr Ile Val Gln His Leu Phe Pro Trp Pro Leu Ser			
	275	280	285
gct gaa ccc cat cat ata tag			885
Ala Glu Pro His His Ile			
	290		

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<210> 458  
 <211> 294  
 <212> PRT  
 <213> Homo Sapiens

<400> 458

Met Pro His Leu Ser Asn Thr Thr Ser Glu Phe Pro Ile Phe Leu Leu  
 1 5 10 15

Thr Gly Phe Pro Gly Leu Glu Ala Phe His Ile Trp Ile Ser Ile Pro  
 20 25 30

Phe Phe Leu Leu Ser Thr Val Ala Leu Leu Gly Asn Ser Met Ile Leu  
 35 40 45

Leu Val Val Ile Leu Glu Pro Asn Leu His Glu Pro Met Tyr Cys Phe  
 50 55 60

Leu Phe Met Leu Ser Ala Ala Asp Leu Gly Leu Thr Leu Ser Thr Met  
 65 70 75 80

Pro Thr Thr Leu Ser Val Leu Trp Phe Ser Ala Arg Glu Ile Ile Leu  
 85 90 95

Asn Ala Cys Ile Ile Gln Leu Phe Phe Leu His Ser Ser Gly Phe Met  
 100 105 110

Glu Ser Ser Val Leu Met Ala Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125

Cys Arg Pro Leu Arg Tyr Ala Thr Ile Leu Thr Asp Ser Arg Ile Leu  
 130 135 140

Lys Ile Gly Val Ala Ile Val Leu Arg Thr Leu Ile Ser Leu Ser Pro  
 145 150 155 160

Ser Leu Phe Leu Ile Lys Arg Leu Ser Phe Cys Lys Val Asn Val Leu  
 165 170 175

Ser His Ser Tyr Cys Phe His Pro Asp Ala Leu Lys Val Ala Cys Ser  
 180 185 190

Asp Ser Arg Met Asn Ser Tyr Gly Gly Leu Ala Val Leu Ile Leu Val  
 195 200 205

Thr Gly Val Gly Thr Pro Cys Val Ala Leu Ser Tyr Ile Leu Ile Ile  
210 215 220

His Ser Val Leu Asn Ile Ile Ser Ser Glu Gly Arg Arg Lys Ala Phe  
225 230 235 240

Asp Thr Cys Gly Ser His Ile Gly Ala Val Ala Val Phe Tyr Ile Pro  
245 250 255

Trp Val Val Leu Ser Val Val His Arg Phe Phe His Lys Ala Ser Pro  
260 265 270

Ile Cys Pro Pro Thr Ile Val Gln His Leu Phe Pro Trp Pro Leu Ser  
275 280 285

Ala Glu Pro His His Ile  
290

<210> 459  
<211> 984  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(981)  
<223>

<400> 459  
atg gca ata ttc aat aac acc act tcg tct tcc tca aac ttc ctc ctc 48  
Met Ala Ile Phe Asn Asn Thr Thr Ser Ser Ser Asn Phe Leu Leu  
1 5 10 15  
act gca ttc cct ggg ctg gaa tgt gct cat gtc tgg atc tcc att cca 96  
Thr Ala Phe Pro Gly Leu Glu Cys Ala His Val Trp Ile Ser Ile Pro  
20 25 30  
gtc tgc tgt ctc tac acc att gcc ctc ttg gga aac agt atg atc ttt 144  
Val Cys Cys Leu Tyr Thr Ile Ala Leu Leu Gly Asn Ser Met Ile Phe  
35 40 45  
ctt gtc atc att act aag cgg aga ctc cac aaa ccc atg tat tat ttc 192  
Leu Val Ile Ile Thr Lys Arg Arg Leu His Lys Pro Met Tyr Tyr Phe  
50 55 60  
ctc tcc atg ctg gca gct gtt gat cta tgt ctg acc att acg acc ctt 240  
Leu Ser Met Leu Ala Val Asp Leu Cys Leu Thr Ile Thr Thr Leu  
65 70 75 80  
ccc act gtg ctt ggt gtt ctc tgg ttt cat gcc cgg gag atc agc ttt 288  
Pro Thr Val Leu Gly Val Leu Trp Phe His Ala Arg Glu Ile Ser Phe  
85 90 95  
aaa gct tgc ttc att caa atg ttc ttt gtg cat gct ttc tcc ttg ctg 336

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Lys Ala Cys Phe Ile Gln Met Phe Phe Val His Ala Phe Ser Leu Leu  
 100 105 110

gag tcc tcc gtg ctg gta gcc atg gcc ttt gac cgc ttc gtg gct atc 384  
 Glu Ser Ser Val Leu Val Ala Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125

tgt aac cca ctg aac tat gct act atc ctc aca gac agg atg gtc ctg 432  
 Cys Asn Pro Leu Asn Tyr Ala Thr Ile Leu Thr Asp Arg Met Val Leu  
 130 135 140

gtg ata ggg ctg gtc atc tgc att aga cca gca gtt ttc tta ctt ccc 480  
 Val Ile Gly Leu Val Ile Cys Ile Arg Pro Ala Val Phe Leu Leu Pro  
 145 150 155 160

ctt ctt gta gcc ata aac act gtg tct ttt cat ggg ggt cac gag ctt 528  
 Leu Leu Val Ala Ile Asn Thr Val Ser Phe His Gly Gly His Glu Leu  
 165 170 175

tcc cat cca ttt tgc tac cac cca gaa gtg atc aaa tac aca tat tcc 576  
 Ser His Pro Phe Cys Tyr His Pro Glu Val Ile Lys Tyr Thr Tyr Ser  
 180 185 190

aaa cct tgg atc agc agt ttt tgg gga ctg ttt ctt cag ctc tac ctg 624  
 Lys Pro Trp Ile Ser Ser Phe Trp Gly Leu Phe Leu Gln Leu Tyr Leu  
 195 200 205

aat ggc act gac gta ttg ttt att ctt ttc tcc tat gtc ctg atc ctc 672  
 Asn Gly Thr Asp Val Leu Phe Ile Leu Phe Ser Tyr Val Leu Ile Leu  
 210 215 220

cgt act gtt ctg ggc att gtg gcc cga aag aag caa caa aaa gct ctc 720  
 Arg Thr Val Leu Gly Ile Val Ala Arg Lys Lys Gln Gln Lys Ala Leu  
 225 230 235 240

agc act tgt gtc tgt cac atc tgt gca gtc act att ttc tat gtg cca 768  
 Ser Thr Cys Val Cys His Ile Cys Ala Val Thr Ile Phe Tyr Val Pro  
 245 250 255

ctg atc agc ctc tct ttg gca cac cgc ctc ttc cac tcc acc cca agg 816  
 Leu Ile Ser Leu Ser Leu Ala His Arg Leu Phe His Ser Thr Pro Arg  
 260 265 270

gtg ctc tgt agc act ttg gcc aat att tat ctg ctc tta cca cct gtg 864  
 Val Leu Cys Ser Thr Leu Ala Asn Ile Tyr Leu Leu Leu Pro Pro Val  
 275 280 285

ctg aac cct atc att tac agc ttg aag acc aag aca atc cgc cag gct 912  
 Leu Asn Pro Ile Ile Tyr Ser Leu Lys Thr Lys Thr Ile Arg Gln Ala  
 290 295 300

atg ttc cag ctg ctc caa tcc aag ggt tca tgg ggt ttt aat gtg agg 960  
 Met Phe Gln Leu Leu Gln Ser Lys Gly Ser Trp Gly Phe Asn Val Arg  
 305 310 315 320

ggt ctt agg gga aga tgg gat tga 984  
 Gly Leu Arg Gly Arg Trp Asp  
 325

&lt;210&gt; 460

<211> 327  
 <212> PRT  
 <213> Homo Sapiens

<400> 460

Met Ala Ile Phe Asn Asn Thr Thr Ser Ser Ser Ser Asn Phe Leu Leu  
 1 5 10 15

Thr Ala Phe Pro Gly Leu Glu Cys Ala His Val Trp Ile Ser Ile Pro  
 20 25 30

Val Cys Cys Leu Tyr Thr Ile Ala Leu Leu Gly Asn Ser Met Ile Phe  
 35 40 45

Leu Val Ile Ile Thr Lys Arg Arg Leu His Lys Pro Met Tyr Tyr Phe  
 50 55 60

Leu Ser Met Leu Ala Ala Val Asp Leu Cys Leu Thr Ile Thr Thr Leu  
 65 70 75 80

Pro Thr Val Leu Gly Val Leu Trp Phe His Ala Arg Glu Ile Ser Phe  
 85 90 95

Lys Ala Cys Phe Ile Gln Met Phe Phe Val His Ala Phe Ser Leu Leu  
 100 105 110

Glu Ser Ser Val Leu Val Ala Met Ala Phe Asp Arg Phe Val Ala Ile  
 115 120 125

Cys Asn Pro Leu Asn Tyr Ala Thr Ile Leu Thr Asp Arg Met Val Leu  
 130 135 140

Val Ile Gly Leu Val Ile Cys Ile Arg Pro Ala Val Phe Leu Leu Pro  
 145 150 155 160

Leu Leu Val Ala Ile Asn Thr Val Ser Phe His Gly Gly His Glu Leu  
 165 170 175

Ser His Pro Phe Cys Tyr His Pro Glu Val Ile Lys Tyr Thr Tyr Ser  
 180 185 190

Lys Pro Trp Ile Ser Ser Phe Trp Gly Leu Phe Leu Gln Leu Tyr Leu  
 195 200 205

Asn Gly Thr Asp Val Leu Phe Ile Leu Phe Ser Tyr Val Leu Ile Leu  
 210 215 220

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Arg Thr Val Leu Gly Ile Val Ala Arg Lys Lys Gln Gln Lys Ala Leu  
 225 230 235 240

Ser Thr Cys Val Cys His Ile Cys Ala Val Thr Ile Phe Tyr Val Pro  
 245 250 255

Leu Ile Ser Leu Ser Leu Ala His Arg Leu Phe His Ser Thr Pro Arg  
 260 265 270

Val Leu Cys Ser Thr Leu Ala Asn Ile Tyr Leu Leu Leu Pro Pro Val  
 275 280 285

Leu Asn Pro Ile Ile Tyr Ser Leu Lys Thr Lys Thr Ile Arg Gln Ala  
 290 295 300

Met Phe Gln Leu Leu Gln Ser Lys Gly Ser Trp Gly Phe Asn Val Arg  
 305 310 315 320

Gly Leu Arg Gly Arg Trp Asp  
 325

<210> 461  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(972)  
 <223>

<400> 461	48
atg ctg ggt cca gct tat aac cac aca atg gaa acc cct gcc tcc ttc	
Met Leu Gly Pro Ala Tyr Asn His Thr Met Glu Thr Pro Ala Ser Phe	
1 5 10 15	
ctc ctt gtg ggt atc cca gga ctg caa tct tca cat ctt tgg ctg gct	96
Leu Leu Val Gly Ile Pro Gly Leu Gln Ser Ser His Leu Trp Leu Ala	
20 25 30	
atc tca ctg agt gcc atg tac atc ata gcc ctg tta gga aac acc atc	144
Ile Ser Leu Ser Ala Met Tyr Ile Ile Ala Leu Leu Gly Asn Thr Ile	
35 40 45	
atc gtg act gca atc tgg atg gat tcc act cgg cat gag ccc atg tat	192
Ile Val Thr Ala Ile Trp Met Asp Ser Thr Arg His Glu Pro Met Tyr	
50 55 60	
tgc ttt ctg tgt gtt ctg gct gct gtg gac att gtt atg gcc tcc tcg	240
Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser	
65 70 75 80	

gtg gta ccc aag atg gtg agc atc ttc tgc tca gga gac agc tca atc	288
Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile	
85 90 95	
agc ttt agt gct tgt ttc act cag atg ttt ttt gtc cac tta gcc aca	336
Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr	
100 105 110	
gct gtg gag acg ggg ctg ctg ctg acc atg gct ttt gac cgc tat gta	384
Ala Val Glu Thr Gly Leu Leu Leu Thr Met Ala Phe Asp Arg Tyr Val	
115 120 125	
gcc atc tgc aag cct cta cac tac aag aga att ctc acg cct caa gtg	432
Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val	
130 135 140	
atg ctg gga atg agt atg gcc atc acc atc aga gct atc ata gcc ata	480
Met Leu Gly Met Ser Met Ala Ile Thr Ile Arg Ala Ile Ile Ala Ile	
145 150 155 160	
act cca ctg agt tgg atg gtg agt cat cta cct ttc tgt ggc tcc aat	528
Thr Pro Leu Ser Trp Met Val Ser His Leu Pro Phe Cys Gly Ser Asn	
165 170 175	
gtg gtt gtc cac tcc tac tgt gag cac ata gct ttg gcc agg tta gca	576
Val Val Val His Ser Tyr Cys Glu His Ile Ala Leu Ala Arg Leu Ala	
180 185 190	
tgt gct gac ccc gtg ccc agc agt ctc tac agt ctg att ggt tcc tct	624
Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser	
195 200 205	
ctt atg gtg ggc tct gat gtg gcc ttc att gct gcc tcc tat atc tta	672
Leu Met Val Gly Ser Asp Val Ala Phe Ile Ala Ala Ser Tyr Ile Leu	
210 215 220	
att ctc aag gca gta ttt ggt ctc tcc tca aag act gct cag ttg aaa	720
Ile Leu Lys Ala Val Phe Gly Leu Ser Ser Lys Thr Ala Gln Leu Lys	
225 230 235 240	
gca tta agc aca tgt ggc tcc cat gtg ggg gtt atg gct ttg tac tat	768
Ala Leu Ser Thr Cys Gly Ser His Val Gly Val Met Ala Leu Tyr Tyr	
245 250 255	
cta cct ggg atg gca tcc atc tat gcg gcc tgg ttg ggg cag gat gta	816
Leu Pro Gly Met Ala Ser Ile Tyr Ala Ala Trp Leu Gly Gln Asp Val	
260 265 270	
gtg ccc ttg cac acc caa gtc ctg cta gct gac ctg tac gtg atc atc	864
Val Pro Leu His Thr Gln Val Leu Leu Ala Asp Leu Tyr Val Ile Ile	
275 280 285	
cca gcc acc tta aat ccc atc atc tat ggc atg agg acc aaa caa ctg	912
Pro Ala Thr Leu Asn Pro Ile Ile Tyr Gly Met Arg Thr Lys Gln Leu	
290 295 300	
cgg gag aga ata tgg agt tat ctg atg cat gtc ctc ttt gac cat tcc	960
Arg Glu Arg Ile Trp Ser Tyr Leu Met His Val Leu Phe Asp His Ser	
305 310 315 320	
aac ctg ggt tca tga	975

Asn Leu Gly Ser

<210> 462  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

&lt;400&gt; 462

Met Leu Gly Pro Ala Tyr Asn His Thr Met Glu Thr Pro Ala Ser Phe  
 1 5 10 15

Leu Leu Val Gly Ile Pro Gly Leu Gln Ser Ser His Leu Trp Leu Ala  
 20 25 30

Ile Ser Leu Ser Ala Met Tyr Ile Ile Ala Leu Leu Gly Asn Thr Ile  
 35 40 45

Ile Val Thr Ala Ile Trp Met Asp Ser Thr Arg His Glu Pro Met Tyr  
 50 55 60

Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser  
 65 70 75 80

Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile  
 85 90 95

Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr  
 100 105 110

Ala Val Glu Thr Gly Leu Leu Leu Thr Met Ala Phe Asp Arg Tyr Val  
 115 120 125

Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val  
 130 135 140

Met Leu Gly Met Ser Met Ala Ile Thr Ile Arg Ala Ile Ile Ala Ile  
 145 150 155 160

Thr Pro Leu Ser Trp Met Val Ser His Leu Pro Phe Cys Gly Ser Asn  
 165 170 175

Val Val Val His Ser Tyr Cys Glu His Ile Ala Leu Ala Arg Leu Ala  
 180 185 190

Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser  
 195 200 205



Leu Met Val Gly Ser Asp Val Ala Phe Ile Ala Ala Ser Tyr Ile Leu  
 210 215 220

Ile Leu Lys Ala Val Phe Gly Leu Ser Ser Lys Thr Ala Gln Leu Lys  
 225 230 235 240

Ala Leu Ser Thr Cys Gly Ser His Val Gly Val Met Ala Leu Tyr Tyr  
 245 250 255

Leu Pro Gly Met Ala Ser Ile Tyr Ala Ala Trp Leu Gly Gln Asp Val  
 260 265 270

Val Pro Leu His Thr Gln Val Leu Leu Ala Asp Leu Tyr Val Ile Ile  
 275 280 285

Pro Ala Thr Leu Asn Pro Ile Ile Tyr Gly Met Arg Thr Lys Gln Leu  
 290 295 300

Arg Glu Arg Ile Trp Ser Tyr Leu Met His Val Leu Phe Asp His Ser  
 305 310 315 320

Asn Leu Gly Ser

<210> 463  
 <211> 963  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(960)  
 <223>

<400> 463  
 atg agt tcc tgc aac ttc aca cat gcc acc ttt gtg ctt att ggt atc 48  
 Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Val Leu Ile Gly Ile  
 1 5 10 15

cca gga tta gag aaa gcc cat ttc tgg gtt ggc ttc ccc ctc ctt tcc 96  
 Pro Gly Leu Glu Lys Ala His Phe Trp Val Gly Phe Pro Leu Leu Ser  
 20 25 30

atg tat gta gtg gca atg ttt gga aac tgc atc gtg gtc ttc atc gta 144  
 Met Tyr Val Val Ala Met Phe Gly Asn Cys Ile Val Val Phe Ile Val  
 35 40 45

agg acg gaa cgc agc ctg cac gct ccg atg tac ctc ttt ctc tgc atg 192  
 Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met  
 50 55 60

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ctt gca gcc att gac ctg gcc tta tcc aca tcc acc atg cct aag atc 240  
 Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile  
 65 70 75 80

ctt gcc ctt ttc tgg ttt gat tcc cga gag att agc ttt gag gcc tgt 288  
 Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Ser Phe Glu Ala Cys  
 85 90 95

ctt acc cag atg ttc ttt att cat gcc ctc tca gcc att gaa tcc acc 336  
 Leu Thr Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr  
 100 105 110

atc ctg ctg gcc atg gcc ttt gac cgt tat gtg gcc atc tgc cac cca 384  
 Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro  
 115 120 125

ctg cgc cat gct gca gtg ctc aac aat aca gta aca gcc cag att ggc 432  
 Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Ala Gln Ile Gly  
 130 135 140

atc gtg gct gtg gtc cgc gga tcc ctc ttt ttt ttc cca ctg cct ctg 480  
 Ile Val Ala Val Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu  
 145 150 155 160

ctg atc aag cgg ctg gcc ttc tgc cac tcc aat gtc ctc tgc cac tcc 528  
 Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser  
 165 170 175

tat tgt gtc cac cag gat gta atg aag ttg gcc tat gca gac act ttg 576  
 Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Ala Asp Thr Leu  
 180 185 190

ccc aat gtg gta tat ggt ctt act gcc att ctg ctg gtc atg ggc gtg 624  
 Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val  
 195 200 205

gac gta atg ttc atc tcc ttg tcc tat ttt ctg ata ata cga acg gtt 672  
 Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Thr Val  
 210 215 220

ctg caa ctg cct tcc aag tca gag cgg gcc aag gcc ttt gga acc tgt 720  
 Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys  
 225 230 235 240

gtg tca cac att ggt gtg gta ctc gcc ttc tat gtg cca ctt att ggc 768  
 Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly  
 245 250 255

ctc tca gtg gta cac cgc ttt gga aac agc ctt cat ccc att gtg cgt 816  
 Leu Ser Val Val His Arg Phe Gly Asn Ser Leu His Pro Ile Val Arg  
 260 265 270

gtt gtc atg ggt gac atc tac ctg ctg ctg cct cct gtc atc aat ccc 864  
 Val Val Met Gly Asp Ile Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro  
 275 280 285

atc atc tat ggt gcc aaa acc aaa cag atc aga aca cgg gtg ctg gct 912  
 Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala  
 290 295 300

atg ttc aag atc agc tgt gac aag gac ttg cag gct gtg gga ggc aag 960  
 Met Phe Lys Ile Ser Cys Asp Lys Asp Leu Gln Ala Val Gly Gly Lys  
 305 310 315 320

tga 963

<210> 464  
 <211> 320  
 <212> PRT  
 <213> Homo Sapiens

<400> 464

Met Ser Ser Cys Asn Phe Thr His Ala Thr Phe Val Leu Ile Gly Ile  
 1 5 10 15

Pro Gly Leu Glu Lys Ala His Phe Trp Val Gly Phe Pro Leu Leu Ser  
 20 25 30

Met Tyr Val Val Ala Met Phe Gly Asn Cys Ile Val Val Phe Ile Val  
 35 40 45

Arg Thr Glu Arg Ser Leu His Ala Pro Met Tyr Leu Phe Leu Cys Met  
 50 55 60

Leu Ala Ala Ile Asp Leu Ala Leu Ser Thr Ser Thr Met Pro Lys Ile  
 65 70 75 80

Leu Ala Leu Phe Trp Phe Asp Ser Arg Glu Ile Ser Phe Glu Ala Cys  
 85 90 95

Leu Thr Gln Met Phe Phe Ile His Ala Leu Ser Ala Ile Glu Ser Thr  
 100 105 110

Ile Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro  
 115 120 125

Leu Arg His Ala Ala Val Leu Asn Asn Thr Val Thr Ala Gln Ile Gly  
 130 135 140

Ile Val Ala Val Val Arg Gly Ser Leu Phe Phe Phe Pro Leu Pro Leu  
 145 150 155 160

Leu Ile Lys Arg Leu Ala Phe Cys His Ser Asn Val Leu Ser His Ser  
 165 170 175

Tyr Cys Val His Gln Asp Val Met Lys Leu Ala Tyr Ala Asp Thr Leu  
 180 185 190

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Pro Asn Val Val Tyr Gly Leu Thr Ala Ile Leu Leu Val Met Gly Val  
 195 200 205

Asp Val Met Phe Ile Ser Leu Ser Tyr Phe Leu Ile Ile Arg Thr Val  
 210 215 220

Leu Gln Leu Pro Ser Lys Ser Glu Arg Ala Lys Ala Phe Gly Thr Cys  
 225 230 235 240

Val Ser His Ile Gly Val Val Leu Ala Phe Tyr Val Pro Leu Ile Gly  
 245 250 255

Leu Ser Val Val His Arg Phe Gly Asn Ser Leu His Pro Ile Val Arg  
 260 265 270

Val Val Met Gly Asp Ile Tyr Leu Leu Leu Pro Pro Val Ile Asn Pro  
 275 280 285

Ile Ile Tyr Gly Ala Lys Thr Lys Gln Ile Arg Thr Arg Val Leu Ala  
 290 295 300

Met Phe Lys Ile Ser Cys Asp Lys Asp Leu Gln Ala Val Gly Gly Lys  
 305 310 315 320

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 <211> 957  
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 <213> Homo Sapiens

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 Met Met Val Asp Pro Asn Gly Asn Glu Ser Ser Ala Thr Tyr Phe Ile  
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cta ata ggc ctc cct ggt tta gaa gag gct cag ttc tgg ttg gcc ttc  
 Leu Ile Gly Leu Pro Gly Leu Glu Glu Ala Gln Phe Trp Leu Ala Phe  
 20 25 30

cca ttg tgc tcc ctc tac ctt att gct gtg cta ggt aac ttg aca atc  
 Pro Leu Cys Ser Leu Tyr Leu Ile Ala Val Leu Gly Asn Leu Thr Ile  
 35 40 45

atc tac att gtg cgg act gag cac agc ctg cat gag ccc atg tat ata  
 Ile Tyr Ile Val Arg Thr Glu His Ser Leu His Glu Pro Met Tyr Ile  
 50 55 60

ttt ctt tgc atg ctt tca ggc att gac atc ctc atc tcc acc tca tcc	240
Phe Leu Cys Met Leu Ser Gly Ile Asp Ile Leu Ile Ser Thr Ser Ser	
65 70 75 80	
atg ccc aaa atg ctg gcc atc ttc tgg ttc aat tcc act acc atc cag	288
Met Pro Lys Met Leu Ala Ile Phe Trp Phe Asn Ser Thr Thr Ile Gln	
85 90 95	
ttt gat gct tgt ctg cta cag atg ttt gcc atc cac tcc tta tct ggc	336
Phe Asp Ala Cys Leu Leu Gln Met Phe Ala Ile His Ser Leu Ser Gly	
100 105 110	
atg gaa tcc aca gtg ctg ctg gcc atg gct ttt gac cgc tat gtg gcc	384
Met Glu Ser Thr Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala	
115 120 125	
atc tgt cac cca ctg cgc cat gcc aca gta ctt acg ttg cct cgt gtc	432
Ile Cys His Pro Leu Arg His Ala Thr Val Leu Thr Leu Pro Arg Val	
130 135 140	
acc aaa att ggt gtg gct gct gtg gtg cgg ggg gct gca ctg atg gca	480
Thr Lys Ile Gly Val Ala Ala Val Val Arg Gly Ala Ala Leu Met Ala	
145 150 155 160	
ccc ctt cct gtc ttc atc aag cag ctg ccc ttc tgc cgc tcc aat atc	528
Pro Leu Pro Val Phe Ile Lys Gln Leu Pro Phe Cys Arg Ser Asn Ile	
165 170 175	
ctt tcc cat tcc tac tgc cta cac caa gat gtc atg aag ctg gcc tgt	576
Leu Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys	
180 185 190	
gat gat atc cgg gtc aat gtc gtc tat ggc ctt atc gtc atc atc tcc	624
Asp Asp Ile Arg Val Asn Val Val Tyr Gly Leu Ile Val Ile Ile Ser	
195 200 205	
gcc att ggc ctg gac tca ctt ctc atc tcc ttc tca tat ctg ctt att	672
Ala Ile Gly Leu Asp Ser Leu Leu Ile Ser Phe Ser Tyr Leu Leu Ile	
210 215 220	
ctt aag act gtg ttg ggc ttg aca cgt gaa gcc cag gcc aag gca ttt	720
Leu Lys Thr Val Leu Gly Leu Thr Arg Glu Ala Gln Ala Lys Ala Phe	
225 230 235 240	
ggc act tgc gtc tct cat gtg tgt gct gtg ttc ata ttc tat gta cct	768
Gly Thr Cys Val Ser His Val Cys Ala Val Phe Ile Phe Tyr Val Pro	
245 250 255	
ttc att gga ttg tcc atg gtg cat cgc ttt agc aag cgg cgt gac tct	816
Phe Ile Gly Leu Ser Met Val His Arg Phe Ser Lys Arg Arg Asp Ser	
260 265 270	
cgg ctg ccc gtc atc ttg gcc aat atc tat ctg ctg gtt cct cct gtg	864
Pro Leu Pro Val Ile Leu Ala Asn Ile Tyr Leu Leu Val Pro Pro Val	
275 280 285	
ctc aac cca att gtc tat gga gtg aag aca aag gag att cga cag cgc	912
Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Glu Ile Arg Gln Arg	
290 295 300	
atc ctt cga ctt ttc cat gtg gcc aca cac gct tca gag ccc tag	957

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Ile Leu Arg Leu Phe His Val Ala Thr His Ala Ser Glu Pro  
 305 310 315

<210> 466  
 <211> 318  
 <212> PRT  
 <213> Homo Sapiens

<400> 466

Met Met Val Asp Pro Asn Gly Asn Glu Ser Ser Ala Thr Tyr Phe Ile  
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Leu Ile Gly Leu Pro Gly Leu Glu Glu Ala Gln Phe Trp Leu Ala Phe  
 20 25 30

Pro Leu Cys Ser Leu Tyr Leu Ile Ala Val Leu Gly Asn Leu Thr Ile  
 35 40 45

Ile Tyr Ile Val Arg Thr Glu His Ser Leu His Glu Pro Met Tyr Ile  
 50 55 60

Phe Leu Cys Met Leu Ser Gly Ile Asp Ile Leu Ile Ser Thr Ser Ser  
 65 70 75 80

Met Pro Lys Met Leu Ala Ile Phe Trp Phe Asn Ser Thr Thr Ile Gln  
 85 90 95

Phe Asp Ala Cys Leu Leu Gln Met Phe Ala Ile His Ser Leu Ser Gly  
 100 105 110

Met Glu Ser Thr Val Leu Leu Ala Met Ala Phe Asp Arg Tyr Val Ala  
 115 120 125

Ile Cys His Pro Leu Arg His Ala Thr Val Leu Thr Leu Pro Arg Val  
 130 135 140

Thr Lys Ile Gly Val Ala Ala Val Val Arg Gly Ala Ala Leu Met Ala  
 145 150 155 160

Pro Leu Pro Val Phe Ile Lys Gln Leu Pro Phe Cys Arg Ser Asn Ile  
 165 170 175

Leu Ser His Ser Tyr Cys Leu His Gln Asp Val Met Lys Leu Ala Cys  
 180 185 190

Asp Asp Ile Arg Val Asn Val Val Tyr Gly Leu Ile Val Ile Ile Ser  
 195 200 205

Ala Ile Gly Leu Asp Ser Leu Leu Ile Ser Phe Ser Tyr Leu Leu Ile  
210 215 220

Leu Lys Thr Val Leu Gly Leu Thr Arg Glu Ala Gln Ala Lys Ala Phe  
225 230 235 240

Gly Thr Cys Val Ser His Val Cys Ala Val Phe Ile Phe Tyr Val Pro  
245 250 255

Phe Ile Gly Leu Ser Met Val His Arg Phe Ser Lys Arg Arg Asp Ser  
260 265 270

Pro Leu Pro Val Ile Leu Ala Asn Ile Tyr Leu Leu Val Pro Pro Val  
275 280 285

Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Glu Ile Arg Gln Arg  
290 295 300

Ile Leu Arg Leu Phe His Val Ala Thr His Ala Ser Glu Pro  
305 310 315

<210> 467  
<211> 975  
<212> DNA  
<213> Homo Sapiens

<220>  
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<222> (1)..(972)  
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ctc ctt gtg ggt atc cca gga ctg caa tct tca cat ctt tgg ctg gct 96  
Leu Leu Val Gly Ile Pro Gly Leu Gln Ser Ser His Leu Trp Leu Ala  
20 25 30  
atc tca ctg agt gcc atg tac atc ata gcc ctg tta gga aac acc atc 144  
Ile Ser Leu Ser Ala Met Tyr Ile Ile Ala Leu Leu Gly Asn Thr Ile  
35 40 45  
atc gtg act gca atc tgg atg gat tcc act cgg cat gag ccc atg tat 192  
Ile Val Thr Ala Ile Trp Met Asp Ser Thr Arg His Glu Pro Met Tyr  
50 55 60  
tgc ttt ctg tgt gtt ctg gct gct gtg gac att gtt atg gcc tcc tcg 240  
Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser  
65 70 75 80

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gtg gta ccc aag atg gtg agc atc ttc tgc tca gga gac agc tca atc 288  
 Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile  
 85 90 95

agc ttt agt gct tgt ttc act cag atg ttt ttt gtc cac tta gcc aca 336  
 Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr  
 100 105 110

gct gtg gag acg ggg ctg ctg ctg acc atg gct ttt gac cgc tat gta 384  
 Ala Val Glu Thr Gly Leu Leu Thr Met Ala Phe Asp Arg Tyr Val  
 115 120 125

gcc atc tgc aag cct cta cac tac aag aga att ctc acg cct caa gtg 432  
 Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val  
 130 135 140

atg ctg gga atg agt atg gcc atc acc atc aga gct atc ata gcc ata 480  
 Met Leu Gly Met Ser Met Ala Ile Thr Ile Arg Ala Ile Ile Ala Ile  
 145 150 155 160

act cca ctg agt tgg atg gtg agt cat cta cct ttc tgt ggc tcc aat 528  
 Thr Pro Leu Ser Trp Met Val Ser His Leu Pro Phe Cys Gly Ser Asn  
 165 170 175

gtg gtt gtc cac tcc tac tgt gag cac ata gct ttg gcc agg tta gca 576  
 Val Val Val His Ser Tyr Cys Glu His Ile Ala Leu Ala Arg Leu Ala  
 180 185 190

tgt gct gac ccc gtg ccc agc agt ctc tac agt ctg att ggt tcc tct 624  
 Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser  
 195 200 205

ctt atg gtg ggc tct gat gtg gcc ttc att gct gcc tcc tat atc tta 672  
 Leu Met Val Gly Ser Asp Val Ala Phe Ile Ala Ala Ser Tyr Ile Leu  
 210 215 220

att ctc aag gca gta ttt ggt ctc tcc tca aag act gct cag ttg aaa 720  
 Ile Leu Lys Ala Val Phe Gly Leu Ser Ser Lys Thr Ala Gln Leu Lys  
 225 230 235 240

gca tta agc aca tgt ggc tcc cat gtg ggg gtt atg gct ttg tac tat 768  
 Ala Leu Ser Thr Cys Gly Ser His Val Gly Val Met Ala Leu Tyr Tyr  
 245 250 255

cta cct ggg atg gca tcc atc tat gcg gcc tgg ttg ggg cag gat gta 816  
 Leu Pro Gly Met Ala Ser Ile Tyr Ala Ala Trp Leu Gly Gln Asp Val  
 260 265 270

gtg ccc ttg cac acc caa gtc ctg cta gct gac ctg tac gtg atc atc 864  
 Val Pro Leu His Thr Gln Val Leu Leu Ala Asp Leu Tyr Val Ile Ile  
 275 280 285

cca gcc acc tta aat ccc atc atc tat ggc atg agg acc aaa caa ctg 912  
 Pro Ala Thr Leu Asn Pro Ile Ile Tyr Gly Met Arg Thr Lys Gln Leu  
 290 295 300

cgg gag aga ata tgg agt tat ctg atg cat gtc ctc ttt gac cat tcc 960  
 Arg Glu Arg Ile Trp Ser Tyr Leu Met His Val Leu Phe Asp His Ser  
 305 310 315 320



aac ctg ggt tca tga  
Asn Leu Gly Ser

975

<210> 468  
<211> 324  
<212> PRT  
<213> Homo Sapiens

<400> 468

Met Leu Gly Pro Ala Tyr Asn His Thr Met Glu Thr Pro Ala Ser Phe  
1 5 10 15

Leu Leu Val Gly Ile Pro Gly Leu Gln Ser Ser His Leu Trp Leu Ala  
20 25 30

Ile Ser Leu Ser Ala Met Tyr Ile Ile Ala Leu Leu Gly Asn Thr Ile  
35 40 45

Ile Val Thr Ala Ile Trp Met Asp Ser Thr Arg His Glu Pro Met Tyr  
50 55 60

Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser  
65 70 75 80

Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile  
85 90 95

Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr  
100 105 110

Ala Val Glu Thr Gly Leu Leu Leu Thr Met Ala Phe Asp Arg Tyr Val  
115 120 125

Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val  
130 135 140

Met Leu Gly Met Ser Met Ala Ile Thr Ile Arg Ala Ile Ile Ala Ile  
145 150 155 160

Thr Pro Leu Ser Trp Met Val Ser His Leu Pro Phe Cys Gly Ser Asn  
165 170 175

Val Val Val His Ser Tyr Cys Glu His Ile Ala Leu Ala Arg Leu Ala  
180 185 190

Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser

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<210> 469
<211> 975
<212> DNA
<213> Homo Sapiens

<220>
<221> CDS
<222> (1)..(972)
<223>
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Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser			
65	70	75	80
gtg gta ccc aag atg gtg agc atc ttc tgc tcg gga gac agc tcc atc			288
Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile			
	85	90	95
agc ttt agt gct tgt ttc act cag atg ttt ttt gtc cac tta gcc aca			336
Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr			
	100	105	110
gct gtg gag acg ggg ctg ctg ctg acc atg gct ttt gac cgc tat gta			384
Ala Val Glu Thr Gly Leu Leu Leu Thr Met Ala Phe Asp Arg Tyr Val			
	115	120	125
gcc atc tgc aag cct cta cac tac aag aga att ctc acg cct caa gtg			432
Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val			
	130	135	140
atg ctg gga atg agt atg gcc gtc acc atc aga gct gtc aca ttc atg			480
Met Leu Gly Met Ser Met Ala Val Thr Ile Arg Ala Val Thr Phe Met			
	145	150	155
act cca ctg agt tgg atg atg aat cat cta cct ttc tgt ggc tcc aat			528
Thr Pro Leu Ser Trp Met Met Asn His Leu Pro Phe Cys Gly Ser Asn			
	165	170	175
gtg gtt gtc cac tcc tac tgt aag cac ata gct ttg gcc agg tta gca			576
Val Val Val His Ser Tyr Cys Lys His Ile Ala Leu Ala Arg Leu Ala			
	180	185	190
tgt gct gac ccc gtg ccc agc agt ctc tac agt ctg att ggt tcc tct			624
Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser			
	195	200	205
ctt atg gtg ggc tct gat gtg gcc ttc att gct gcc tcc tat atc tta			672
Leu Met Val Gly Ser Asp Val Ala Phe Ile Ala Ala Ser Tyr Ile Leu			
	210	215	220
att ctc agg gca gta ttt gat ctc tcc tca aag act gct cag ttg aaa			720
Ile Leu Arg Ala Val Phe Asp Leu Ser Ser Lys Thr Ala Gln Leu Lys			
	225	230	235
gca tta agc aca tgt ggc tcc cat gtg ggg gtt atg gct ttg tac tat			768
Ala Leu Ser Thr Cys Gly Ser His Val Gly Val Met Ala Leu Tyr Tyr			
	245	250	255
cta cct ggg atg gca tcc atc tat gcg gcc tgg ttg ggg cag gat ata			816
Leu Pro Gly Met Ala Ser Ile Tyr Ala Ala Trp Leu Gly Gln Asp Ile			
	260	265	270
gtg ccc ttg cac acc caa gtg ctg cta gct gac ctg tac gtg atc atc			864
Val Pro Leu His Thr Gln Val Leu Leu Ala Asp Leu Tyr Val Ile Ile			
	275	280	285
cca gcc act tta aat ccc atc atc tat ggc atg agg acc aaa caa ttg			912
Pro Ala Thr Leu Asn Pro Ile Ile Tyr Gly Met Arg Thr Lys Gln Leu			
	290	295	300

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ctg gag gga ata tgg agt tat ctg atg cac ttc ctc ttt gac cac tcc 960  
 Leu Glu Gly Ile Trp Ser Tyr Leu Met His Phe Leu Phe Asp His Ser  
 305 310 315 320

aac ctg ggt tca tga  
 Asn Leu Gly Ser 975

<210> 470  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 470

Met Leu Gly Pro Ala Tyr Asn His Thr Met Glu Thr Pro Ala Ser Phe  
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Leu Leu Val Gly Ile Pro Gly Leu Gln Ser Ser His Leu Trp Leu Ala  
 20 25 30

Ile Ser Leu Ser Ala Met Tyr Ile Thr Ala Leu Leu Gly Asn Thr Leu  
 35 40 45

Ile Val Thr Ala Ile Trp Met Asp Ser Thr Arg His Glu Pro Met Tyr  
 50 55 60

Cys Phe Leu Cys Val Leu Ala Ala Val Asp Ile Val Met Ala Ser Ser  
 65 70 75 80

Val Val Pro Lys Met Val Ser Ile Phe Cys Ser Gly Asp Ser Ser Ile  
 85 90 95

Ser Phe Ser Ala Cys Phe Thr Gln Met Phe Phe Val His Leu Ala Thr  
 100 105 110

Ala Val Glu Thr Gly Leu Leu Leu Thr Met Ala Phe Asp Arg Tyr Val  
 115 120 125

Ala Ile Cys Lys Pro Leu His Tyr Lys Arg Ile Leu Thr Pro Gln Val  
 130 135 140

Met Leu Gly Met Ser Met Ala Val Thr Ile Arg Ala Val Thr Phe Met  
 145 150 155 160

Thr Pro Leu Ser Trp Met Met Asn His Leu Pro Phe Cys Gly Ser Asn  
 165 170 175

Val Val Val His Ser Tyr Cys Lys His Ile Ala Leu Ala Arg Leu Ala  
180 185 190

Cys Ala Asp Pro Val Pro Ser Ser Leu Tyr Ser Leu Ile Gly Ser Ser  
195 200 205

Leu Met Val Gly Ser Asp Val Ala Phe Ile Ala Ala Ser Tyr Ile Leu  
210 215 220

Ile Leu Arg Ala Val Phe Asp Leu Ser Ser Lys Thr Ala Gln Leu Lys  
225 230 235 240

Ala Leu Ser Thr Cys Gly Ser His Val Gly Val Met Ala Leu Tyr Tyr  
245 250 255

Leu Pro Gly Met Ala Ser Ile Tyr Ala Ala Trp Leu Gly Gln Asp Ile  
260 265 270

Val Pro Leu His Thr Gln Val Leu Leu Ala Asp Leu Tyr Val Ile Ile  
275 280 285

Pro Ala Thr Leu Asn Pro Ile Ile Tyr Gly Met Arg Thr Lys Gln Leu  
290 295 300

Leu Glu Gly Ile Trp Ser Tyr Leu Met His Phe Leu Phe Asp His Ser  
305 310 315 320

Asn Leu Gly Ser

<210> 471  
<211> 975  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(972)  
<223>

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1 5 10 15  
aat ctg gtc cac gca gca tac ttc ctt ttg gtg ggt atc cct ggc ctg 96  
Asn Leu Val His Ala Ala Tyr Phe Leu Leu Val Gly Ile Pro Gly Leu  
20 25 30  
ggg cct acc ata cac ttt tgg ctg gct ttc cca ctg tgt ttt atg tat 144

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Gly Pro Thr Ile His Phe Trp Leu Ala Phe Pro Leu Cys Phe Met Tyr  
 35 40 45  
 192  
 gcc ttg gcc acc ctg ggt aac ctg acc att gtc ctc atc att cgt gtg  
 Ala Leu Ala Thr Leu Gly Asn Leu Thr Ile Val Leu Ile Ile Arg Val  
 50 55 60  
 240  
 gag agg cga ctg cat gag ccc atg tac ctc ttc ctg gcc atg ctt tcc  
 Glu Arg Arg Leu His Glu Pro Met Tyr Leu Phe Leu Ala Met Leu Ser  
 65 70 75 80  
 288  
 act att gac cta gtc ctc tcc tct atc acc atg ccc aag atg gcc agt  
 Thr Ile Asp Leu Val Leu Ser Ser Ile Thr Met Pro Lys Met Ala Ser  
 85 90 95  
 336  
 ctt ttc ctg atg ggc atc cag gag atc gag ttc aac att tgc ctg gcc  
 Leu Phe Leu Met Gly Ile Gln Glu Ile Glu Phe Asn Ile Cys Leu Ala  
 100 105 110  
 384  
 cag atg ttc ctt atc cat gct ctg tca gcc gtg gag tca gct gtc ctg  
 Gln Met Phe Leu Ile His Ala Leu Ser Ala Val Glu Ser Ala Val Leu  
 115 120 125  
 432  
 ctg gcc atg gct ttt gac cgc ttt gtg gcc att tgc cac cca ttg cgc  
 Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg  
 130 135 140  
 480  
 cat gct tct gtg ctg aca ggg tgt act gtg gcc aag att gga cta tct  
 His Ala Ser Val Leu Thr Gly Cys Thr Val Ala Lys Ile Gly Leu Ser  
 145 150 155 160  
 528  
 gcc ctg acc agg ggg ttt gta ttc ttc ttc cca ctg ccc ttc atc ctc  
 Ala Leu Thr Arg Gly Phe Val Phe Phe Phe Pro Leu Pro Phe Ile Leu  
 165 170 175  
 576  
 aag tgg ttg tcc tac tgc caa aca cat act gtc aca cac tcc ttc tgt  
 Lys Trp Leu Ser Tyr Cys Gln Thr His Thr Val Thr His Ser Phe Cys  
 180 185 190  
 624  
 ctg cac caa gat att atg aag ctg tcc tgt act gac acc agg gtc aat  
 Leu His Gln Asp Ile Met Lys Leu Ser Cys Thr Asp Thr Arg Val Asn  
 195 200 205  
 672  
 gtg gtt tat gga ctc ttc atc atc ctc tca gtc atg ggt gtg gac tct  
 Val Val Tyr Gly Leu Phe Ile Ile Leu Ser Val Met Gly Val Asp Ser  
 210 215 220  
 720  
 ctc ttc att ggc ttc tca tat atc ctc atc ctg tgg gct gtt ttg gag  
 Leu Phe Ile Gly Phe Ser Tyr Ile Leu Ile Leu Trp Ala Val Leu Glu  
 225 230 235 240  
 768  
 ctg tcc tct cgg agg gca gca ctc aag gct ttc aac acc tgc atc tcc  
 Leu Ser Ser Arg Ala Ala Leu Lys Ala Phe Asn Thr Cys Ile Ser  
 245 250 255  
 816  
 cac ctc tgt gct gtt ctg gtc ttc tat gta ccc ctc att ggg ctc tgc  
 His Leu Cys Ala Val Leu Val Phe Tyr Val Pro Leu Ile Gly Leu Ser  
 260 265 270  
 864  
 gtg gtg cat agg ctg ggt ggt ccc acc tcc ctc ctc cat gtg gtt atg  
 Val Val His Arg Leu Gly Gly Pro Thr Ser Leu Leu His Val Val Met

275					280					285							
gct	aat	acc	tac	ttg	ctg	cta	cca	cct	gta	gtc	aac	ccc	ctt	gtc	tat	912	
Ala	Asn	Thr	Tyr	Leu	Leu	Leu	Pro	Pro	Val	Val	Asn	Pro	Leu	Val	Tyr		
290					295					300							
gga	gcc	aag	acc	aaa	gag	atc	tgt	tca	agg	gtc	ctc	tgt	atg	ttc	tca	960	
Gly	Ala	Lys	Thr	Lys	Glu	Ile	Cys	Ser	Arg	Val	Leu	Cys	Met	Phe	Ser		
305					310					315					320		
caa	ggt	ggc	aag	tga											975		
Gln	Gly	Gly	Lys														

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<210> 472
<211> 324
<212> PRT
<213> Homo Sapiens
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<400> 472

Met Gln Lys Pro Gln Leu Leu Val Pro Ile Ile Ala Thr Ser Asn Gly  
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Asn Leu Val His Ala Ala Tyr Phe Leu Leu Val Gly Ile Pro Gly Leu  
20 25 30

Gly Pro Thr Ile His Phe Trp Leu Ala Phe Pro Leu Cys Phe Met Tyr  
35 40 45

Ala Leu Ala Thr Leu Gly Asn Leu Thr Ile Val Leu Ile Ile Arg Val  
50 55 60

Glu Arg Arg Leu His Glu Pro Met Tyr Leu Phe Leu Ala Met Leu Ser  
65 70 75 80

Thr Ile Asp Leu Val Leu Ser Ser Ile Thr Met Pro Lys Met Ala Ser  
85 90 95

Leu Phe Leu Met Gly Ile Gln Glu Ile Glu Phe Asn Ile Cys Leu Ala  
100 105 110

Gln Met Phe Leu Ile His Ala Leu Ser Ala Val Glu Ser Ala Val Leu  
115 120 125

Leu Ala Met Ala Phe Asp Arg Phe Val Ala Ile Cys His Pro Leu Arg  
130 135 140

His Ala Ser Val Leu Thr Gly Cys Thr Val Ala Lys Ile Gly Leu Ser  
145 150 155 160

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Ala Leu Thr Arg Gly Phe Val Phe Phe Phe Pro Leu Pro Phe Ile Leu  
 165 170 175

Lys Trp Leu Ser Tyr Cys Gln Thr His Thr Val Thr His Ser Phe Cys  
 180 185 190

Leu His Gln Asp Ile Met Lys Leu Ser Cys Thr Asp Thr Arg Val Asn  
 195 200 205

Val Val Tyr Gly Leu Phe Ile Ile Leu Ser Val Met Gly Val Asp Ser  
 210 215 220

Leu Phe Ile Gly Phe Ser Tyr Ile Leu Ile Leu Trp Ala Val Leu Glu  
 225 230 235 240

Leu Ser Ser Arg Arg Ala Ala Leu Lys Ala Phe Asn Thr Cys Ile Ser  
 245 250 255

His Leu Cys Ala Val Leu Val Phe Tyr Val Pro Leu Ile Gly Leu Ser  
 260 265 270

Val Val His Arg Leu Gly Gly Pro Thr Ser Leu Leu His Val Val Met  
 275 280 285

Ala Asn Thr Tyr Leu Leu Leu Pro Pro Val Val Asn Pro Leu Val Tyr  
 290 295 300

Gly Ala Lys Thr Lys Glu Ile Cys Ser Arg Val Leu Cys Met Phe Ser  
 305 310 315 320

Gln Gly Gly Lys

<210> 473  
 <211> 943  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1) .. (942)  
 <223>

<400> 473  
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 Met Leu Thr Phe His Asn Val Cys Ser Val Pro Ser Ser Phe Trp Leu  
 1 5 10 15

48



act ggc atc cca ggg ctg gag tcc cta cac gtc tgg ctc tcc atc ccc	96
Thr Gly Ile Pro Gly Leu Glu Ser Leu His Val Trp Leu Ser Ile Pro	
20 25 30	
ttt ggc tcc atg tac ctg gtg gct gtg gtg ggg aat gtg acc atc ctg	144
Phe Gly Ser Met Tyr Leu Val Ala Val Val Gly Asn Val Thr Ile Leu	
35 40 45	
gct gtg gta aag ata gaa cgc agc ctg cac cag ccc atg tac ttt ttc	192
Ala Val Val Lys Ile Glu Arg Ser Leu His Gln Pro Met Tyr Phe Phe	
50 55 60	
ttg tgc atg ttg gct gcc att gac ctg gtt ctg tct act tcc act ata	240
Leu Cys Met Leu Ala Ala Ile Asp Leu Val Leu Ser Thr Ser Thr Ile	
65 70 75 80	
ccc aaa ctt ctg gga atc ttc tgg ttc ggt gct tgt gac att ggc ctg	288
Pro Lys Leu Leu Gly Ile Phe Trp Phe Gly Ala Cys Asp Ile Gly Leu	
85 90 95	
gac gcc tgc ttg ggc caa atg ttc ctt atc cac tgc ttt gcc act gtt	336
Asp Ala Cys Leu Gly Gln Met Phe Leu Ile His Cys Phe Ala Thr Val	
100 105 110	
gag tca ggc atc ttc ctt gcc atg gct ttt gat cgc tac gtg gcc atc	384
Glu Ser Gly Ile Phe Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile	
115 120 125	
tgc aac cca cta cgt cat agc atg gtg ctc act tat aca gtg gtg ggt	432
Cys Asn Pro Leu Arg His Ser Met Val Leu Thr Tyr Thr Val Val Gly	
130 135 140	
cgt ttg ggg ctt gtt tct ctc ctc cgg ggt gtt ctc tac att gga cct	480
Arg Leu Gly Leu Val Ser Leu Leu Arg Gly Val Leu Tyr Ile Gly Pro	
145 150 155 160	
ctg cct ctg atg atc cgc ctg cgg ctg ccc ctt tat aaa acc cat gtt	528
Leu Pro Leu Met Ile Arg Leu Arg Leu Pro Leu Tyr Lys Thr His Val	
165 170 175	
atc tcc cac tcc tac tgt gag cac atg gct gta gtt gcc ttg aca tgt	576
Ile Ser His Ser Tyr Cys Glu His Met Ala Val Val Ala Leu Thr Cys	
180 185 190	
ggc gac agc agg gtc aat aat gtc tat ggg ctg agc atc ggc ttt ctg	624
Gly Asp Ser Arg Val Asn Asn Val Tyr Gly Leu Ser Ile Gly Phe Leu	
195 200 205	
gtg ttg atc ctg gac tca gtg gct att gct gca tcc tat gtg atg att	672
Val Leu Ile Leu Asp Ser Val Ala Ile Ala Ala Ser Tyr Val Met Ile	
210 215 220	
ttc agg gcc gtg atg ggg tta gcc act cct gag gct agg ctt aaa acc	720
Phe Arg Ala Val Met Gly Leu Ala Thr Pro Glu Ala Arg Leu Lys Thr	
225 230 235 240	
ctg ggg aca tgc gct tct cac ctc tgt gcc atc ctg atc ttt tat gtt	768
Leu Gly Thr Cys Ala Ser His Leu Cys Ala Ile Leu Ile Phe Tyr Val	
245 250 255	
ccc att gct gtt tct tcc ctg att cac cga ttt ggt cag tgt gtg cct	816

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Pro Ile Ala Val Ser Ser Leu Ile His Arg Phe Gly Gln Cys Val Pro  
 260 265 270  
 cct cca gtc cac act ctg ctg gcc aac ttc tat ctc ctc att cct cca 864  
 Pro Pro Val His Thr Leu Leu Ala Asn Phe Tyr Leu Leu Ile Pro Pro  
 275 280 285  
 atc ctc aat ccc att gtc tat gct gtt cgc acc aag cag atc cga gag 912  
 Ile Leu Asn Pro Ile Val Tyr Ala Val Arg Thr Lys Gln Ile Arg Glu  
 290 295 300  
 agc ctt ctc caa ata cca agg ata gaa atg a 943  
 Ser Leu Leu Gln Ile Pro Arg Ile Glu Met  
 305 310

<210> 474  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 474

Met Leu Thr Phe His Asn Val Cys Ser Val Pro Ser Ser Phe Trp Leu  
 1 5 10 15  
 Thr Gly Ile Pro Gly Leu Glu Ser Leu His Val Trp Leu Ser Ile Pro  
 20 25 30  
 Phe Gly Ser Met Tyr Leu Val Ala Val Val Gly Asn Val Thr Ile Leu  
 35 40 45  
 Ala Val Val Lys Ile Glu Arg Ser Leu His Gln Pro Met Tyr Phe Phe  
 50 55 60  
 Leu Cys Met Leu Ala Ala Ile Asp Leu Val Leu Ser Thr Ser Thr Ile  
 65 70 75 80  
 Pro Lys Leu Leu Gly Ile Phe Trp Phe Gly Ala Cys Asp Ile Gly Leu  
 85 90 95  
 Asp Ala Cys Leu Gly Gln Met Phe Leu Ile His Cys Phe Ala Thr Val  
 100 105 110  
 Glu Ser Gly Ile Phe Leu Ala Met Ala Phe Asp Arg Tyr Val Ala Ile  
 115 120 125  
 Cys Asn Pro Leu Arg His Ser Met Val Leu Thr Tyr Thr Val Val Gly  
 130 135 140  
 Arg Leu Gly Leu Val Ser Leu Leu Arg Gly Val Leu Tyr Ile Gly Pro  
 145 150 155 160

Leu Pro Leu Met Ile Arg Leu Arg Leu Pro Leu Tyr Lys Thr His Val  
 165 170 175

Ile Ser His Ser Tyr Cys Glu His Met Ala Val Val Ala Leu Thr Cys  
 180 185 190

Gly Asp Ser Arg Val Asn Asn Val Tyr Gly Leu Ser Ile Gly Phe Leu  
 195 200 205

Val Leu Ile Leu Asp Ser Val Ala Ile Ala Ala Ser Tyr Val Met Ile  
 210 215 220

Phe Arg Ala Val Met Gly Leu Ala Thr Pro Glu Ala Arg Leu Lys Thr  
 225 230 235 240

Leu Gly Thr Cys Ala Ser His Leu Cys Ala Ile Leu Ile Phe Tyr Val  
 245 250 255

Pro Ile Ala Val Ser Ser Leu Ile His Arg Phe Gly Gln Cys Val Pro  
 260 265 270

Pro Pro Val His Thr Leu Leu Ala Asn Phe Tyr Leu Leu Ile Pro Pro  
 275 280 285

Ile Leu Asn Pro Ile Val Tyr Ala Val Arg Thr Lys Gln Ile Arg Glu  
 290 295 300

Ser Leu Leu Gln Ile Pro Arg Ile Glu Met  
 305 310

<210> 475  
 <211> 942  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(939)  
 <223>

<400> 475  
 atg agc cct gag aac cag agc agc gtg tcc gag ttc ctc ctt ctg ggc 48  
 Met Ser Pro Glu Asn Gln Ser Ser Val Ser Glu Phe Leu Leu Leu Gly  
 1 5 10 15

ctc ccc atc cgg cca gag cag cag gct gtg ttc ttc acc ctg ttc ctg 96  
 Leu Pro Ile Arg Pro Glu Gln Gln Ala Val Phe Phe Thr Leu Phe Leu  
 20 25 30

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ggc atg tac ctg acc acg gtg ctg ggg aac ctg ctc atc atg ctg ctc 144  
 Gly Met Tyr Leu Thr Thr Val Leu Gly Asn Leu Leu Ile Met Leu Leu  
 35 40 45

atc cag ctg gac tct cac ctt cac acc ccc atg tac ttc ttc ctc agc 192  
 Ile Gln Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60

cac ttg gct ctc act gac atc tcc ttt tca tct gtc act gtc cct aag 240  
 His Leu Ala Leu Thr Asp Ile Ser Phe Ser Ser Val Thr Val Pro Lys  
 65 70 75 80

atg ctg atg gac atg cgg act aag tac aaa tcg atc ctc tat gag gaa 288  
 Met Leu Met Asp Met Arg Thr Lys Tyr Lys Ser Ile Leu Tyr Glu Glu  
 85 90 95

tgc att tct cag atg tat ttt ttt ata ttt ttt act gac ctg gac agc 336  
 Cys Ile Ser Gln Met Tyr Phe Phe Ile Phe Phe Thr Asp Leu Asp Ser  
 100 105 110

ttc ctt att aca tca atg gca tat gac cga tat gtt gcc ata tgt cac 384  
 Phe Leu Ile Thr Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
 115 120 125

cct ctc cac tac act gtc atc atg agg gaa gag ctc tgt gtc ttc tta 432  
 Pro Leu His Tyr Thr Val Ile Met Arg Glu Glu Leu Cys Val Phe Leu  
 130 135 140

gtg gct gta tct tgg att ctg tct tgt gcc agc tcc ctc tct cac acc 480  
 Val Ala Val Ser Trp Ile Leu Ser Cys Ala Ser Ser Leu Ser His Thr  
 145 150 155 160

ctt ctc ctg acc cgg ctg tct ttc tgt gct gcg aac acc atc ccc cat 528  
 Leu Leu Leu Thr Arg Leu Ser Phe Cys Ala Ala Asn Thr Ile Pro His  
 165 170 175

gtc ttc tgt gac ctt gct gcc ctg ctc aag ctg tcc tgc tca gat atc 576  
 Val Phe Cys Asp Leu Ala Ala Leu Leu Lys Leu Ser Cys Ser Asp Ile  
 180 185 190

ttc ctc aat gag ctg gtc atg ttc aca gta ggg gtg gtg gtc att acc 624  
 Phe Leu Asn Glu Leu Val Met Phe Thr Val Gly Val Val Val Ile Thr  
 195 200 205

ctg cca ttc atg tgt atc ctg gta tca tat ggc tac att ggg gcc acc 672  
 Leu Pro Phe Met Cys Ile Leu Val Ser Tyr Gly Tyr Ile Gly Ala Thr  
 210 215 220

atc ctg agg gtc cct tca acc aaa ggg atc cac aaa gca ttg tcc aca 720  
 Ile Leu Arg Val Pro Ser Thr Lys Gly Ile His Lys Ala Leu Ser Thr  
 225 230 235 240

tgt ggc tcc cat ctc tct gtg gtg tct ctc tat tat ggg tca ata ttt 768  
 Cys Gly Ser His Leu Ser Val Val Ser Leu Tyr Tyr Gly Ser Ile Phe  
 245 250 255

ggc cag tac ctt ttc ccg act gta agc agt tct att gac aag gat gtc 816  
 Gly Gln Tyr Leu Phe Pro Thr Val Ser Ser Ser Ile Asp Lys Asp Val  
 260 265 270

att gtg gct ctc atg tac acg gtg gtc aca ccc atg ttg aac ccc ttt 864  
 Ile Val Ala Leu Met Tyr Thr Val Val Thr Pro Met Leu Asn Pro Phe  
                   275                                  280                                  285

atc tac agc ctt agg aac agg gac atg aaa gag gcc ctt ggg aaa ctc 912  
 Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Glu Ala Leu Gly Lys Leu  
                   290                                  295                                  300

ttc agt aga gca aca ttt ttc tct tgg tga 942  
 Phe Ser Arg Ala Thr Phe Phe Ser Trp  
 305                                  310

<210> 476

<211> 313

<212> PRT

<213> Homo Sapiens

<400> 476

Met Ser Pro Glu Asn Gln Ser Ser Val Ser Glu Phe Leu Leu Leu Gly  
 1                                  5                                  10                                  15

Leu Pro Ile Arg Pro Glu Gln Gln Ala Val Phe Phe Thr Leu Phe Leu  
                   20                                  25                                  30

Gly Met Tyr Leu Thr Thr Val Leu Gly Asn Leu Leu Ile Met Leu Leu  
                   35                                  40                                  45

Ile Gln Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
                   50                                  55                                  60

His Leu Ala Leu Thr Asp Ile Ser Phe Ser Ser Val Thr Val Pro Lys  
                   65                                  70                                  75                                  80

Met Leu Met Asp Met Arg Thr Lys Tyr Lys Ser Ile Leu Tyr Glu Glu  
                   85                                  90                                  95

Cys Ile Ser Gln Met Tyr Phe Phe Ile Phe Phe Thr Asp Leu Asp Ser  
                   100                                  105                                  110

Phe Leu Ile Thr Ser Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
                   115                                  120                                  125

Pro Leu His Tyr Thr Val Ile Met Arg Glu Glu Leu Cys Val Phe Leu  
                   130                                  135                                  140

Val Ala Val Ser Trp Ile Leu Ser Cys Ala Ser Ser Leu Ser His Thr  
                   145                                  150                                  155                                  160

Leu Leu Leu Thr Arg Leu Ser Phe Cys Ala Ala Asn Thr Ile Pro His

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<222> (1) .. (993)
<223>
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atg tgc tgg act atg ccc tct cca ttt aca ggt agc tct act aga aat          48
Met Cys Trp Thr Met Pro Ser Pro Phe Thr Gly Ser Ser Thr Arg Asn
1                               10                          15

atg gag agc gga aac caa tca aca gtg act gaa ttt atc ttc act gga          96
Met Glu Ser Gly Asn Gln Ser Thr Val Thr Glu Phe Ile Phe Thr Gly
                20                        25                      30

ttc cct cag ctt cag gat ggt agt ctg ctg tac ttc ttt cct tta ctt        144
Phe Pro Gln Leu Gln Asp Gly Ser Leu Leu Tyr Phe Phe Pro Leu Leu
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35	40	45	
ttc atc tat act ttt att atc att gat aac tta tta atc ttc tct gct			192
Phe Ile Tyr Thr Phe Ile Ile Ile Asp Asn Leu Leu Ile Phe Ser Ala			
50	55	60	
gta agg ctg gac acc cat ctc cac aac ccc atg tat aat ttt atc agt			240
Val Arg Leu Asp Thr His Leu His Asn Pro Met Tyr Asn Phe Ile Ser			
65	70	75	80
ata ttt tcc ttt ctg gag atc tgg tac acc aca gcc acc att ccc aag			288
Ile Phe Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Thr Ile Pro Lys			
85	90		95
atg ctc tcc aac ctc atc agt gaa aag aag gcc atc tca atg act ggc			336
Met Leu Ser Asn Leu Ile Ser Glu Lys Lys Ala Ile Ser Met Thr Gly			
100	105		110
tgc atc ttg cag atg tat ttc ttc cac tca ctt gaa aac tca gag ggg			384
Cys Ile Leu Gln Met Tyr Phe Phe His Ser Leu Glu Asn Ser Glu Gly			
115	120		125
atc ttg ctg acc acc atg gcc att gac aga tac gtt gcc atc tgc aac			432
Ile Leu Leu Thr Thr Met Ala Ile Asp Arg Tyr Val Ala Ile Cys Asn			
130	135		140
cct ctt cgc tat caa atg atc atg acc ccc cgg ctc tgt gct caa ctc			480
Pro Leu Arg Tyr Gln Met Ile Met Thr Pro Arg Leu Cys Ala Gln Leu			
145	150		160
tct gca ggt tcc tgc ctc ttc ggt ttc ctt atc ctg ctt ccc gag att			528
Ser Ala Gly Ser Cys Leu Phe Gly Phe Leu Ile Leu Leu Pro Glu Ile			
165	170		175
gtg atg att tcc aca ctg cct ttc tgt ggg ccc aac caa atc cat cag			576
Val Met Ile Ser Thr Leu Pro Phe Cys Gly Pro Asn Gln Ile His Gln			
180	185		190
atc ttc tgt gac ttg gtc cct gtg cta agc ctg gcc tgt aca gac acg			624
Ile Phe Cys Asp Leu Val Pro Val Leu Ser Leu Ala Cys Thr Asp Thr			
195	200		205
tcc atg att ctg att gag gat gtg att cat gct gtg acc atc atc att			672
Ser Met Ile Leu Ile Glu Asp Val Ile His Ala Val Thr Ile Ile Ile			
210	215		220
acc ttc cta atc att gcc ctg tcc tat gta aga att gtc act gtg ata			720
Thr Phe Leu Ile Ile Ala Leu Ser Tyr Val Arg Ile Val Thr Val Ile			
225	230		240
ttg agg att ccc tct tct gaa ggg agg caa aag gct ttt tct acc tgt			768
Leu Arg Ile Pro Ser Ser Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys			
245	250		255
gca ggc cac ctc atg gtc ttc ccg ata ttc ttt ggc agt gta tca ctc			816
Ala Gly His Leu Met Val Phe Pro Ile Phe Phe Gly Ser Val Ser Leu			
260	265		270
atg tac ttg cgt ttc agc gac act tat cca cca gtt ttg gac aca gcc			864
Met Tyr Leu Arg Phe Ser Asp Thr Tyr Pro Pro Val Leu Asp Thr Ala			
275	280		285

att gca ctg atg ttt act gta ctt gct cca ttc ttc aat ccc atc att 912  
 Ile Ala Leu Met Phe Thr Val Leu Ala Pro Phe Phe Asn Pro Ile Ile  
 290 295 300

tat agc ctg aga aac aag gac atg aac aat gcg att aaa aaa ctg ttc 960  
 Tyr Ser Leu Arg Asn Lys Asp Met Asn Asn Ala Ile Lys Lys Leu Phe  
 305 310 315 320

tgt ctt caa aaa gtg ttg aac aag cct gga ggt taa 996  
 Cys Leu Gln Lys Val Leu Asn Lys Pro Gly Gly  
 325 330

<210> 478

<211> 331

<212> PRT

<213> Homo Sapiens

<400> 478

Met Cys Trp Thr Met Pro Ser Pro Phe Thr Gly Ser Ser Thr Arg Asn  
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Met Glu Ser Gly Asn Gln Ser Thr Val Thr Glu Phe Ile Phe Thr Gly  
 20 25 30

Phe Pro Gln Leu Gln Asp Gly Ser Leu Leu Tyr Phe Phe Pro Leu Leu  
 35 40 45

Phe Ile Tyr Thr Phe Ile Ile Ile Asp Asn Leu Leu Ile Phe Ser Ala  
 50 55 60

Val Arg Leu Asp Thr His Leu His Asn Pro Met Tyr Asn Phe Ile Ser  
 65 70 75 80

Ile Phe Ser Phe Leu Glu Ile Trp Tyr Thr Thr Ala Thr Ile Pro Lys  
 85 90 95

Met Leu Ser Asn Leu Ile Ser Glu Lys Lys Ala Ile Ser Met Thr Gly  
 100 105 110

Cys Ile Leu Gln Met Tyr Phe Phe His Ser Leu Glu Asn Ser Glu Gly  
 115 120 125

Ile Leu Leu Thr Thr Met Ala Ile Asp Arg Tyr Val Ala Ile Cys Asn  
 130 135 140

Pro Leu Arg Tyr Gln Met Ile Met Thr Pro Arg Leu Cys Ala Gln Leu  
 145 150 155 160



Ser Ala Gly Ser Cys Leu Phe Gly Phe Leu Ile Leu Leu Pro Glu Ile  
 165 170 175

Val Met Ile Ser Thr Leu Pro Phe Cys Gly Pro Asn Gln Ile His Gln  
 180 185 190

Ile Phe Cys Asp Leu Val Pro Val Leu Ser Leu Ala Cys Thr Asp Thr  
 195 200 205

Ser Met Ile Leu Ile Glu Asp Val Ile His Ala Val Thr Ile Ile Ile  
 210 215 220

Thr Phe Leu Ile Ile Ala Leu Ser Tyr Val Arg Ile Val Thr Val Ile  
 225 230 235 240

Leu Arg Ile Pro Ser Ser Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys  
 245 250 255

Ala Gly His Leu Met Val Phe Pro Ile Phe Phe Gly Ser Val Ser Leu  
 260 265 270

Met Tyr Leu Arg Phe Ser Asp Thr Tyr Pro Pro Val Leu Asp Thr Ala  
 275 280 285

Ile Ala Leu Met Phe Thr Val Leu Ala Pro Phe Phe Asn Pro Ile Ile  
 290 295 300

Tyr Ser Leu Arg Asn Lys Asp Met Asn Asn Ala Ile Lys Lys Leu Phe  
 305 310 315 320

Cys Leu Gln Lys Val Leu Asn Lys Pro Gly Gly  
 325 330

<210> 479  
 <211> 945  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (942)  
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<400> 479  
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 Met Glu Thr Arg Asn Tyr Ser Ala Met Thr Glu Phe Phe Leu Val Gly  
 1 5 10 15  
 ctt tcc caa tat cca gag ctc cag ctt ttt ctg ttc ctg ctc tgc ctc 96

Leu Ser Gln Tyr Pro Glu Leu Gln Leu Phe Leu Phe Leu Leu Cys Leu	
20 25 30	
atc atg tac atg ata atc ctc ctg gga aat agc ctc ctc att atc atc	144
Ile Met Tyr Met Ile Ile Leu Leu Gly Asn Ser Leu Leu Ile Ile Ile	
35 40 45	
acc atc ttg gat tct cgc ctc cat act ccc atg tat ttc ttt ctt gga	192
Thr Ile Leu Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly	
50 55 60	
aac ctc tca ttc ttg gac atc tgt tac aca tcc tca tcc att cct cca	240
Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Ser Ser Ser Ile Pro Pro	
65 70 75 80	
atg ctt att ata ttt atg tct gag aga aaa tcc atc tcc ttc att ggc	288
Met Leu Ile Ile Phe Met Ser Glu Arg Lys Ser Ile Ser Phe Ile Gly	
85 90 95	
tgt gct ctg cag atg gtt gtg tcc ctt ggc ttg ggc tcc act gag tgt	336
Cys Ala Leu Gln Met Val Val Ser Leu Gly Leu Gly Ser Thr Glu Cys	
100 105 110	
gtc ctc ctg gct gtg atg gcc tat gac cac tat gtg gcc atc tgc aac	384
Val Leu Leu Ala Val Met Ala Tyr Asp His Tyr Val Ala Ile Cys Asn	
115 120 125	
cca ctg agg tac tcc atc atc atg aac gga gtg ctg tat gtg caa atg	432
Pro Leu Arg Tyr Ser Ile Ile Met Asn Gly Val Leu Tyr Val Gln Met	
130 135 140	
gct gca tgg tcc tgg atc ata ggc tgt ctg acc tcc cta ttg caa aca	480
Ala Ala Trp Ser Trp Ile Ile Gly Cys Leu Thr Ser Leu Leu Gln Thr	
145 150 155 160	
gtt ctg aca atg atg ttg cct ttc tgt ggg aat aat gtc att gat cat	528
Val Leu Thr Met Met Leu Pro Phe Cys Gly Asn Asn Val Ile Asp His	
165 170 175	
att acc tgt gaa att ttg gcc ctt cta aaa ctt gtt tgt tca gat atc	576
Ile Thr Cys Glu Ile Leu Ala Leu Leu Lys Leu Val Cys Ser Asp Ile	
180 185 190	
acc atc aat gtg ctt atc atg aca gtg aca aat att gtt tca ctg gtg	624
Thr Ile Asn Val Leu Ile Met Thr Val Thr Asn Ile Val Ser Leu Val	
195 200 205	
att ctt cta ctg tta att ttc atc tcc tat gtg ttt att ctc tct tcc	672
Ile Leu Leu Leu Leu Ile Phe Ile Ser Tyr Val Phe Ile Leu Ser Ser	
210 215 220	
atc ctg aga att aat tgt gct gag gga aga aag aaa gcc ttc tct acc	720
Ile Leu Arg Ile Asn Cys Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr	
225 230 235 240	
tgt tca gcg cac tcg att gtg gtc atc tta ttc tac ggt tca gcc ctt	768
Cys Ser Ala His Ser Ile Val Val Ile Leu Phe Tyr Gly Ser Ala Leu	
245 250 255	
ttt atg tac atg aaa ccc aag tca aag aac act aat aca tct gat gag	816
Phe Met Tyr Met Lys Pro Lys Ser Lys Asn Thr Asn Thr Ser Asp Glu	

260	265	270	
att att ggg ctg tct tat gga gtg gta agc cca atg tta aat ccc atc			864
Ile Ile Gly Leu Ser Tyr Gly Val Val Ser Pro Met Leu Asn Pro Ile			
275	280	285	
atc tat agc ctc agg aat aaa gag gtc aaa gag gct gta aag aaa gtc			912
Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Val Lys Lys Val			
290	295	300	
ctg agc aga cat ctg cat tta ttg aaa atg tga			945
Leu Ser Arg His Leu His Leu Leu Lys Met			
305	310		

<210> 480  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 480

Met Glu Thr Arg Asn Tyr Ser Ala Met Thr Glu Phe Phe Leu Val Gly
1 5 10 15

Leu Ser Gln Tyr Pro Glu Leu Gln Leu Phe Leu Phe Leu Leu Cys Leu
20 25 30

Ile Met Tyr Met Ile Ile Leu Leu Gly Asn Ser Leu Leu Ile Ile Ile
35 40 45

Thr Ile Leu Asp Ser Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly
50 55 60

Asn Leu Ser Phe Leu Asp Ile Cys Tyr Thr Ser Ser Ser Ile Pro Pro
65 70 75 80

Met Leu Ile Ile Phe Met Ser Glu Arg Lys Ser Ile Ser Phe Ile Gly
85 90 95

Cys Ala Leu Gln Met Val Val Ser Leu Gly Leu Gly Ser Thr Glu Cys
100 105 110

Val Leu Leu Ala Val Met Ala Tyr Asp His Tyr Val Ala Ile Cys Asn
115 120 125

Pro Leu Arg Tyr Ser Ile Ile Met Asn Gly Val Leu Tyr Val Gln Met
130 135 140

Ala Ala Trp Ser Trp Ile Ile Gly Cys Leu Thr Ser Leu Leu Gln Thr
145 150 155 160

Val Leu Thr Met Met Leu Pro Phe Cys Gly Asn Asn Val Ile Asp His  
165 170 175

Ile Thr Cys Glu Ile Leu Ala Leu Leu Lys Leu Val Cys Ser Asp Ile  
180 185 190

Thr Ile Asn Val Leu Ile Met Thr Val Thr Asn Ile Val Ser Leu Val  
195 200 205

Ile Leu Leu Leu Leu Ile Phe Ile Ser Tyr Val Phe Ile Leu Ser Ser  
210 215 220

Ile Leu Arg Ile Asn Cys Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr  
225 230 235 240

Cys Ser Ala His Ser Ile Val Val Ile Leu Phe Tyr Gly Ser Ala Leu  
245 250 255

Phe Met Tyr Met Lys Pro Lys Ser Lys Asn Thr Asn Thr Ser Asp Glu  
260 265 270

Ile Ile Gly Leu Ser Tyr Gly Val Val Ser Pro Met Leu Asn Pro Ile  
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Glu Ala Val Lys Lys Val  
290 295 300

Leu Ser Arg His Leu His Leu Leu Lys Met  
305 310

<210> 481  
<211> 972  
<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(969)  
<223>

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Met Ser Thr Leu Pro Thr Gln Ile Ala Pro Asn Ser Ser Thr Ser Met  
1 5 10 15

gcc ccc acc ttc ttg ctg gtg ggc atg cca ggc cta tca ggt gca ccc 96  
Ala Pro Thr Phe Leu Leu Val Gly Met Pro Gly Leu Ser Gly Ala Pro  
20 25 30

tcc tgg tgg aca ttg ccc ctc att gct gtc tac ctt ctc tct gca ctg	144
Ser Trp Trp Thr Leu Pro Leu Ile Ala Val Tyr Leu Leu Ser Ala Leu	
35 40 45	
gga aat ggc acc atc ctc tgg atc att gcc ctg cag ccc gcc ctg cac	192
Gly Asn Gly Thr Ile Leu Trp Ile Ile Ala Leu Gln Pro Ala Leu His	
50 55 60	
cgc cca atg cac ttc ttc ctc ttc ttg ctt agt gtg tct gat att gga	240
Arg Pro Met His Phe Phe Leu Phe Leu Leu Ser Val Ser Asp Ile Gly	
65 70 75 80	
ttg gtc act gcc ctg atg ccc aca ctg ctg ggc atc gcc ctt gct ggt	288
Leu Val Thr Ala Leu Met Pro Thr Leu Leu Gly Ile Ala Leu Ala Gly	
85 90 95	
gct cac act gtc cct gcc tca gcc tgc ctt cta cag atg gtt ttt atc	336
Ala His Thr Val Pro Ala Ser Ala Cys Leu Leu Gln Met Val Phe Ile	
100 105 110	
cat gtc ttt tct gtc atg gag tcc tct gtc ttg ctc gcc atg tcc att	384
His Val Phe Ser Val Met Glu Ser Ser Val Leu Leu Ala Met Ser Ile	
115 120 125	
gat cgg gca ctg gcc atc tgc cga cct ctc cac tac cca gcg ctc ctc	432
Asp Arg Ala Leu Ala Ile Cys Arg Pro Leu His Tyr Pro Ala Leu Leu	
130 135 140	
acc aat ggt gta att agc aaa atc agc ctg gcc att tct ttt cga tgc	480
Thr Asn Gly Val Ile Ser Lys Ile Ser Leu Ala Ile Ser Phe Arg Cys	
145 150 155 160	
ctg ggt ctc cat ctg ccc ctg cca ttc ctg ctg gcc tac atg ccc tac	528
Leu Gly Leu His Leu Pro Leu Pro Phe Leu Leu Ala Tyr Met Pro Tyr	
165 170 175	
tgc ctc cca cag gtc cta acc cat tct tat tgc ttg cat cca gat gtg	576
Cys Leu Pro Gln Val Leu Thr His Ser Tyr Cys Leu His Pro Asp Val	
180 185 190	
gct cgt ttg gcc tgc cca gaa gct tgg ggt gca gcc tac agc cta ttt	624
Ala Arg Leu Ala Cys Pro Glu Ala Trp Gly Ala Ala Tyr Ser Leu Phe	
195 200 205	
gtg gtt ctt tca gcc atg ggt ttg gac ccc ctg ctt att ttc ttc tcc	672
Val Val Leu Ser Ala Met Gly Leu Asp Pro Leu Leu Ile Phe Phe Ser	
210 215 220	
tat ggc ctg att ggc aag gtg ttg caa ggt gtg gag tcc aga gag gat	720
Tyr Gly Leu Ile Gly Lys Val Leu Gln Gly Val Glu Ser Arg Glu Asp	
225 230 235 240	
cgc tgg aag gct ggt caa acc tgt gct gcc cac ctc tct gca gtg ctc	768
Arg Trp Lys Ala Gly Gln Thr Cys Ala Ala His Leu Ser Ala Val Leu	
245 250 255	
ctc ttc tat atc cct atg atc ctc ctg gca ctg att aac cat cct gag	816
Leu Phe Tyr Ile Pro Met Ile Leu Leu Ala Leu Ile Asn His Pro Glu	
260 265 270	
ctg cca atc act cag cat acc cat act ctt cta tcc tat gtc cat ttc	864

Leu Pro Ile Thr Gln His Thr His Thr Leu Leu Ser Tyr Val His Phe  
 275 280 285  
 ctt ctt cct cca ttg ata aac cct att ctc tat agt gtc aag atg aag 912  
 Leu Leu Pro Pro Leu Ile Asn Pro Ile Leu Tyr Ser Val Lys Met Lys  
 290 295 300  
 gag att aga aag aga ata ctc aac agg ttg cag ccc agg aag gtg ggt 960  
 Glu Ile Arg Lys Arg Ile Leu Asn Arg Leu Gln Pro Arg Lys Val Gly  
 305 310 315 320  
 ggt gct cag tga 972  
 Gly Ala Gln

<210> 482  
 <211> 323  
 <212> PRT  
 <213> Homo Sapiens

<400> 482

Met Ser Thr Leu Pro Thr Gln Ile Ala Pro Asn Ser Ser Thr Ser Met  
 1 5 10 15  
 Ala Pro Thr Phe Leu Leu Val Gly Met Pro Gly Leu Ser Gly Ala Pro  
 20 25 30  
 Ser Trp Trp Thr Leu Pro Leu Ile Ala Val Tyr Leu Leu Ser Ala Leu  
 35 40 45  
 Gly Asn Gly Thr Ile Leu Trp Ile Ile Ala Leu Gln Pro Ala Leu His  
 50 55 60  
 Arg Pro Met His Phe Phe Leu Phe Leu Leu Ser Val Ser Asp Ile Gly  
 65 70 75 80  
 Leu Val Thr Ala Leu Met Pro Thr Leu Leu Gly Ile Ala Leu Ala Gly  
 85 90 95  
 Ala His Thr Val Pro Ala Ser Ala Cys Leu Leu Gln Met Val Phe Ile  
 100 105 110  
 His Val Phe Ser Val Met Glu Ser Ser Val Leu Leu Ala Met Ser Ile  
 115 120 125  
 Asp Arg Ala Leu Ala Ile Cys Arg Pro Leu His Tyr Pro Ala Leu Leu  
 130 135 140  
 Thr Asn Gly Val Ile Ser Lys Ile Ser Leu Ala Ile Ser Phe Arg Cys  
 145 150 155 160

Leu Gly Leu His Leu Pro Leu Pro Phe Leu Leu Ala Tyr Met Pro Tyr  
 165 170 175

Cys Leu Pro Gln Val Leu Thr His Ser Tyr Cys Leu His Pro Asp Val  
 180 185 190

Ala Arg Leu Ala Cys Pro Glu Ala Trp Gly Ala Ala Tyr Ser Leu Phe  
 195 200 205

Val Val Leu Ser Ala Met Gly Leu Asp Pro Leu Leu Ile Phe Phe Ser  
 210 215 220

Tyr Gly Leu Ile Gly Lys Val Leu Gln Gly Val Glu Ser Arg Glu Asp  
 225 230 235 240

Arg Trp Lys Ala Gly Gln Thr Cys Ala Ala His Leu Ser Ala Val Leu  
 245 250 255

Leu Phe Tyr Ile Pro Met Ile Leu Leu Ala Leu Ile Asn His Pro Glu  
 260 265 270

Leu Pro Ile Thr Gln His Thr His Thr Leu Leu Ser Tyr Val His Phe  
 275 280 285

Leu Leu Pro Pro Leu Ile Asn Pro Ile Leu Tyr Ser Val Lys Met Lys  
 290 295 300

Glu Ile Arg Lys Arg Ile Leu Asn Arg Leu Gln Pro Arg Lys Val Gly  
 305 310 315 320

Gly Ala Gln

<210> 483  
 <211> 1047  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(1044)  
 <223>

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 48  
 Met Asp Leu Gly Asn Ser Gly Asn Asp Ser Val Val Thr Lys Phe Val

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ctg ctg ggc ctc aca gag act gca gct cta cag ccc atc ctc ttt gtc				96
Leu Leu Gly Leu Thr Glu Thr Ala Ala Leu Gln Pro Ile Leu Phe Val				
20	25	30		
atc ttc ctt ctt gct tac gtc act acc att gga ggc acc ctc agc atc				144
Ile Phe Leu Leu Ala Tyr Val Thr Thr Ile Gly Gly Thr Leu Ser Ile				
35	40	45		
ctg gcg gcc atc ctt atg gaa acc aaa ctc cac agc ccc atg tac ttc				192
Leu Ala Ala Ile Leu Met Glu Thr Lys Leu His Ser Pro Met Tyr Phe				
50	55	60		
ttc ctg ggg aac ttg tcc ctg cca gat gtg ggg tgt gtc agt gtc act				240
Phe Leu Gly Asn Leu Ser Leu Pro Asp Val Gly Cys Val Ser Val Thr				
65	70	75	80	
gtc cct gcc atg ctg agc cat ttc ata tcc aac gac aga agc att ccc				288
Val Pro Ala Met Leu Ser His Phe Ile Ser Asn Asp Arg Ser Ile Pro				
85	90	95		
tat aag gcc tgc ctc tcc gag ctc ttc ttc ttc cac ctc ctg gct ggg				336
Tyr Lys Ala Cys Leu Ser Glu Leu Phe Phe Phe His Leu Leu Ala Gly				
100	105	110		
gca gac tgc ttc ttg ctg acc atc atg gcc tat gac cgc tat ctg gcc				384
Ala Asp Cys Phe Leu Leu Thr Ile Met Ala Tyr Asp Arg Tyr Leu Ala				
115	120	125		
atc tgc cag tcc ctc acc tac agc agc cgc atg agc tgg gga atc cag				432
Ile Cys Gln Ser Leu Thr Tyr Ser Ser Arg Met Ser Trp Gly Ile Gln				
130	135	140		
caa gcc ctg gtg ggc atg tca tgt gtc ttt tcc ttc acc aat gca ctg				480
Gln Ala Leu Val Gly Met Ser Cys Val Phe Ser Phe Thr Asn Ala Leu				
145	150	155	160	
acc caa act gtt gcc ctg tct cct ctt aac ttc tgt ggc ccc aat gtg				528
Thr Gln Thr Val Ala Leu Ser Pro Leu Asn Phe Cys Gly Pro Asn Val				
165	170	175		
atc aat cac ttc tac tgt gac ctc cca cag ccc ttc cag ctc tcc tgc				576
Ile Asn His Phe Tyr Cys Asp Leu Pro Gln Pro Phe Gln Leu Ser Cys				
180	185	190		
gcc agt gtt cat ctc aat ggg cag ttg ctg ttt gta gca gca gct ttc				624
Ala Ser Val His Leu Asn Gly Gln Leu Leu Phe Val Ala Ala Ala Phe				
195	200	205		
atg ggt gtg gcc ccc ttg gtc ctc atc act gtg tcc tat gcc cat gtg				672
Met Gly Val Ala Pro Leu Val Leu Ile Thr Val Ser Tyr Ala His Val				
210	215	220		
gca gct gca gtc ctg cga atc cgc tct gca gag ggc aaa aag aaa gcc				720
Ala Ala Ala Val Leu Arg Ile Arg Ser Ala Glu Gly Lys Lys Lys Ala				
225	230	235	240	
ttc tcc acg tgt agt tcc cac ctc act gtg gtg ggc atc ttc tat ggg				768
Phe Ser Thr Cys Ser Ser His Leu Thr Val Val Gly Ile Phe Tyr Gly				
245	250	255		



acg ggc gtc ttc agc tac aca agg ctg ggt tca gtg gag tct tcg gac 816  
 Thr Gly Val Phe Ser Tyr Thr Arg Leu Gly Ser Val Glu Ser Ser Asp  
 260 265 270

aag gac aag ggc att ggc atc ctc aac act gtc atc agc ccc atg ctg 864  
 Lys Asp Lys Gly Ile Gly Ile Leu Asn Thr Val Ile Ser Pro Met Leu  
 275 280 285

aac cca ctc atc tac tgg aca tct ctg ctg gac gtc ggg tgc atc agt 912  
 Asn Pro Leu Ile Tyr Trp Thr Ser Leu Leu Asp Val Gly Cys Ile Ser  
 290 295 300

cac tgt tcc tcc gat gct ggc gtg tct cca ggc cca cca gtg cag agt 960  
 His Cys Ser Ser Asp Ala Gly Val Ser Pro Gly Pro Pro Val Gln Ser  
 305 310 315 320

tcc cta tgc tgc ctg cag ttc aca gct ctt ctt tcc cca cct cct ggc 1008  
 Ser Leu Cys Cys Leu Gln Phe Thr Ala Leu Leu Ser Pro Pro Pro Gly  
 325 330 335

tgg ggt gga ctg tca cct ctt aat agc cat ggc cta tga 1047  
 Trp Gly Gly Leu Ser Pro Leu Asn Ser His Gly Leu  
 340 345

<210> 484

<211> 348

<212> PRT

<213> Homo Sapiens

<400> 484

Met Asp Leu Gly Asn Ser Gly Asn Asp Ser Val Val Thr Lys Phe Val  
 1 5 10 15

Leu Leu Gly Leu Thr Glu Thr Ala Ala Leu Gln Pro Ile Leu Phe Val  
 20 25 30

Ile Phe Leu Leu Ala Tyr Val Thr Thr Ile Gly Gly Thr Leu Ser Ile  
 35 40 45

Leu Ala Ala Ile Leu Met Glu Thr Lys Leu His Ser Pro Met Tyr Phe  
 50 55 60

Phe Leu Gly Asn Leu Ser Leu Pro Asp Val Gly Cys Val Ser Val Thr  
 65 70 75 80

Val Pro Ala Met Leu Ser His Phe Ile Ser Asn Asp Arg Ser Ile Pro  
 85 90 95

Tyr Lys Ala Cys Leu Ser Glu Leu Phe Phe Phe His Leu Leu Ala Gly  
 100 105 110

Ala Asp Cys Phe Leu Leu Thr Ile Met Ala Tyr Asp Arg Tyr Leu Ala

115	120	125
Ile Cys Gln Ser Leu Thr Tyr Ser Ser Arg Met Ser Trp Gly Ile Gln		
130	135	140
Gln Ala Leu Val Gly Met Ser Cys Val Phe Ser Phe Thr Asn Ala Leu		
145	150	155
Thr Gln Thr Val Ala Leu Ser Pro Leu Asn Phe Cys Gly Pro Asn Val		
165	170	175
Ile Asn His Phe Tyr Cys Asp Leu Pro Gln Pro Phe Gln Leu Ser Cys		
180	185	190
Ala Ser Val His Leu Asn Gly Gln Leu Leu Phe Val Ala Ala Ala Phe		
195	200	205
Met Gly Val Ala Pro Leu Val Leu Ile Thr Val Ser Tyr Ala His Val		
210	215	220
Ala Ala Ala Val Leu Arg Ile Arg Ser Ala Glu Gly Lys Lys Lys Ala		
225	230	235
Phe Ser Thr Cys Ser Ser His Leu Thr Val Val Gly Ile Phe Tyr Gly		
245	250	255
Thr Gly Val Phe Ser Tyr Thr Arg Leu Gly Ser Val Glu Ser Ser Asp		
260	265	270
Lys Asp Lys Gly Ile Gly Ile Leu Asn Thr Val Ile Ser Pro Met Leu		
275	280	285
Asn Pro Leu Ile Tyr Trp Thr Ser Leu Leu Asp Val Gly Cys Ile Ser		
290	295	300
His Cys Ser Ser Asp Ala Gly Val Ser Pro Gly Pro Pro Val Gln Ser		
305	310	315
Ser Leu Cys Cys Leu Gln Phe Thr Ala Leu Leu Ser Pro Pro Pro Gly		
325	330	335
Trp Gly Gly Leu Ser Pro Leu Asn Ser His Gly Leu		
340	345	

&lt;210&gt; 485

&lt;211&gt; 1053

<212> DNA  
<213> Homo Sapiens

<220>  
<221> CDS  
<222> (1)..(1050)  
<223>

<220>  
<221> misc\_feature  
<222> (26)..(26)  
<223> any nucleotide

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48

Met Tyr His Arg Asn Ile Phe Ile Xaa Ile His Gly Phe Glu Gly Pro  
1 5 10 15

tat tat att ctc tta aag ata ctg gag aca gag cat gat ggg aca aaa 96  
Tyr Tyr Ile Leu Leu Lys Ile Leu Glu Thr Glu His Asp Gly Thr Lys  
20 25 30

tca aac cag cat ctc aga ctt cct gct cct ggc ctg ccc atc caa cca 144  
Ser Asn Gln His Leu Arg Leu Pro Ala Pro Gly Leu Pro Ile Gln Pro  
35 40 45

gag cag caa aac ctg tgc tat gcc ctg ttc ttg gcc atg tat ctt acc 192  
Glu Gln Gln Asn Leu Cys Tyr Ala Leu Phe Leu Ala Met Tyr Leu Thr  
50 55 60

acc ctc ctg ggg aac ctc ctc atc att gtc ctc att cga ctg gac tcc 240  
Thr Leu Leu Gly Asn Leu Leu Ile Ile Val Leu Ile Arg Leu Asp Ser  
65 70 75 80

cat ctc cac acg cct gtg tat ttg ttt ctc agc aac ttg tcc ttc tct 288  
His Leu His Thr Pro Val Tyr Leu Phe Leu Ser Asn Leu Ser Phe Ser  
85 90 95

gac ctc tgc ttt tcc tca gtc aca atg ccc aaa ttg ctg cag aac atg 336  
Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys Leu Leu Gln Asn Met  
100 105 110

cag aac caa gac cca tcc atc ccc tat gca gac tgc ctg acc caa atg 384  
Gln Asn Gln Asp Pro Ser Ile Pro Tyr Ala Asp Cys Leu Thr Gln Met  
115 120 125

tac ttc ttc ttg tat ttt tcg gat cta gag agc ttc ctc ctt gtg gcc 432  
Tyr Phe Phe Leu Tyr Phe Ser Asp Leu Glu Ser Phe Leu Leu Val Ala  
130 135 140

atg gcc tat gac cgc tat gtg gcc atc tgc ttc ccc atg cac tac acc 480  
Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe Pro Met His Tyr Thr  
145 150 155 160

gcc atc tgc ttc ctc ctg cac tac acc gcc atc atg agc ccc atg ctc 528  
Ala Ile Cys Phe Leu Leu His Tyr Thr Ala Ile Met Ser Pro Met Leu  
165 170 175

tgt ctc tcc gtg gtg gcg ctg tcc tgg gtg ctg acc acc ttc cat gcc 576

Cys Leu Ser Val Val Ala Leu Ser Trp Val Leu Thr Thr Phe His Ala  
 180 185 190  
 atg tta cac act tta ctc atg gcc agg ttg tgt ttt tgt gca gac aat 624  
 Met Leu His Thr Leu Leu Met Ala Arg Leu Cys Phe Cys Ala Asp Asn  
 195 200 205  
 gtg atc ccc cac ttt ttc tgt gat atg tct gct ctg ctg aag ctg gcc 672  
 Val Ile Pro His Phe Phe Cys Asp Met Ser Ala Leu Leu Lys Leu Ala  
 210 215 220  
 tgc tct gac act cga gtt aat gaa tgg gtg ata ttt atc atg gga ggg 720  
 Cys Ser Asp Thr Arg Val Asn Glu Trp Val Ile Phe Ile Met Gly Gly  
 225 230 235 240  
 ctc att ctt gtc atc cca ttc cta ctc atc ctt ggg tcc tat gca aga 768  
 Leu Ile Leu Val Ile Pro Phe Leu Leu Ile Leu Gly Ser Tyr Ala Arg  
 245 250 255  
 att gtc tcc tcc atc ctc aag gtc cct tct tct aag ggt atc tgc aag 816  
 Ile Val Ser Ser Ile Leu Lys Val Pro Ser Ser Lys Gly Ile Cys Lys  
 260 265 270  
 gcc ttc tct act tgt ggc tcc cac ctc tct gtg gtg tca ctg ttc tat 864  
 Ala Phe Ser Thr Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr  
 275 280 285  
 ggg acc gtt att ggt ctc tac tta tgc cca tca gct aat agt tct act 912  
 Gly Thr Val Ile Gly Leu Tyr Leu Cys Pro Ser Ala Asn Ser Ser Thr  
 290 295 300  
 cta aag gac act gtc atg gct atg atg tac act gtg gtg acc cct atg 960  
 Leu Lys Asp Thr Val Met Ala Met Met Tyr Thr Val Val Thr Pro Met  
 305 310 315 320  
 ctg acc ccc ttc atc tac agc ctg agg aac aga gac atg aag gga gcc 1008  
 Leu Thr Pro Phe Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Gly Ala  
 325 330 335  
 ctg gaa agg gtc att tgt aaa agg aaa aat ccc ttc ctt cta tga 1053  
 Leu Glu Arg Val Ile Cys Lys Arg Lys Asn Pro Phe Leu Leu  
 340 345 350

&lt;210&gt; 486

&lt;211&gt; 350

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (9)..(9)

&lt;223&gt; The 'Xaa' at location 9 stands for Tyr, Cys, Ser, or Phe.

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; (26)..(26)

&lt;223&gt; any nucleotide

&lt;400&gt; 486

Met Tyr His Arg Asn Ile Phe Ile Xaa Ile His Gly Phe Glu Gly Pro

1	5	10	15
Tyr Tyr Ile	Leu Leu Lys	Ile Leu Glu Thr	Glu His Asp Gly Thr Lys
	20	25	30
Ser Asn Gln	His Leu Arg	Leu Pro Ala Pro	Gly Leu Pro Ile Gln Pro
	35	40	45
Glu Gln Gln	Asn Leu Cys	Tyr Ala Leu Phe	Leu Ala Met Tyr Leu Thr
	50	55	60
Thr Leu Leu	Gly Asn Leu	Leu Ile Ile Val	Leu Ile Arg Leu Asp Ser
65	70	75	80
His Leu His	Thr Pro Val	Tyr Leu Phe	Leu Ser Asn Leu Ser Phe Ser
	85	90	95
Asp Leu Cys	Phe Ser Ser	Val Thr Met Pro	Lys Leu Leu Gln Asn Met
	100	105	110
Gln Asn Gln	Asp Pro Ser	Ile Pro Tyr Ala	Asp Cys Leu Thr Gln Met
	115	120	125
Tyr Phe Phe	Leu Tyr Phe	Ser Asp Leu Glu	Ser Phe Leu Leu Val Ala
130	135	140	
Met Ala Tyr	Asp Arg Tyr	Val Ala Ile Cys	Phe Pro Met His Tyr Thr
145	150	155	160
Ala Ile Cys	Phe Leu Leu	His Tyr Thr	Ala Ile Met Ser Pro Met Leu
	165	170	175
Cys Leu Ser	Val Val Ala	Leu Ser Trp	Val Leu Thr Thr Phe His Ala
	180	185	190
Met Leu His	Thr Leu Leu	Met Ala Arg	Leu Cys Phe Cys Ala Asp Asn
	195	200	205
Val Ile Pro	His Phe Phe	Cys Asp Met Ser	Ala Leu Leu Lys Leu Ala
	210	215	220
Cys Ser Asp	Thr Arg Val	Asn Glu Trp	Val Ile Phe Ile Met Gly Gly
225	230	235	240
Leu Ile Leu	Val Ile Pro	Phe Leu Leu	Ile Leu Gly Ser Tyr Ala Arg
	245	250	255

Ile Val Ser Ser Ile Leu Lys Val Pro Ser Ser Lys Gly Ile Cys Lys  
 260 265 270

Ala Phe Ser Thr Cys Gly Ser His Leu Ser Val Val Ser Leu Phe Tyr  
 275 280 285

Gly Thr Val Ile Gly Leu Tyr Leu Cys Pro Ser Ala Asn Ser Ser Thr  
 290 295 300

Leu Lys Asp Thr Val Met Ala Met Met Tyr Thr Val Val Thr Pro Met  
 305 310 315 320

Leu Thr Pro Phe Ile Tyr Ser Leu Arg Asn Arg Asp Met Lys Gly Ala  
 325 330 335

Leu Glu Arg Val Ile Cys Lys Arg Lys Asn Pro Phe Leu Leu  
 340 345 350

<210> 487  
 <211> 972  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(969)  
 <223>

<400> 487atg atg gga caa aat caa acc agc atc tca gac ttc ctg ctc ctg ggc  
 48

Met Met Gly Gln Asn Gln Thr Ser Ile Ser Asp Phe Leu Leu Leu Gly  
 1 5 10 15

ctg ccc atc caa cca gag cag caa aac ctg tgc tat gcc ctg ttc ttg 96  
 Leu Pro Ile Gln Pro Glu Gln Asn Leu Cys Tyr Ala Leu Phe Leu  
 20 25 30

gcc atg tat ctt acc acc ctc ctg ggg aac ctc ctc atc att gtc ctc 144  
 Ala Met Tyr Leu Thr Thr Leu Leu Gly Asn Leu Leu Ile Ile Val Leu  
 35 40 45

att cga ctg gac tcc cat ctc cac acg cct gtg tat ttg ttt ctc agc 192  
 Ile Arg Leu Asp Ser His Leu His Thr Pro Val Tyr Leu Phe Leu Ser  
 50 55 60

aac ttg tcc ttc tct gac ctc tgc ttt tcc tca gtc aca atg ccc aaa 240  
 Asn Leu Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
 65 70 75 80

ttg ctg cag aac atg cag aac caa gac cca tcc atc ccc tat gca gac 288  
 Leu Leu Gln Asn Met Gln Asn Gln Asp Pro Ser Ile Pro Tyr Ala Asp  
 85 90 95

tgc ctg acc caa atg tac ttc ttc ttg tat ttt tcg gat cta gag agc	336
Cys Leu Thr Gln Met Tyr Phe Phe Leu Tyr Phe Ser Asp Leu Glu Ser	
100 105 110	
ttc ctc ctt gtg gcc atg gcc tat gac cgc tat gtg gcc atc tgc ttc	384
Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe	
115 120 125	
ccc atg cac tac acc gcc atc tgc ttc ctc ctg cac tac acc gcc atc	432
Pro Met His Tyr Thr Ala Ile Cys Phe Leu Leu His Tyr Thr Ala Ile	
130 135 140	
atg agc ccc atg ctc tgt ctc tcc gtg gtg gcg ctg tcc tgg gtg ctg	480
Met Ser Pro Met Leu Cys Leu Ser Val Val Ala Leu Ser Trp Val Leu	
145 150 155 160	
acc acc ttc cat gcc atg tta cac act tta ctc atg gcc agg ttg tgt	528
Thr Thr Phe His Ala Met Leu His Thr Leu Leu Met Ala Arg Leu Cys	
165 170 175	
ttt tgt gca gac aat gtg atc ccc cac ttt ttc tgt gat atg tct gct	576
Phe Cys Ala Asp Asn Val Ile Pro His Phe Phe Cys Asp Met Ser Ala	
180 185 190	
ctg ctg aag ctg gcc tgc tct gac act cga gtt aat gaa tgg gtg ata	624
Leu Leu Lys Leu Ala Cys Ser Asp Thr Arg Val Asn Glu Trp Val Ile	
195 200 205	
ttt atc atg gga ggg ctc att ctt gtc atc cca ttc cta ctc atc ctt	672
Phe Ile Met Gly Gly Leu Ile Leu Val Ile Pro Phe Leu Leu Ile Leu	
210 215 220	
ggg tcc tat gca aga att gtc tcc tcc atc ctc aag gtc cct tct tct	720
Gly Ser Tyr Ala Arg Ile Val Ser Ser Ile Leu Lys Val Pro Ser Ser	
225 230 235 240	
aag ggt atc tgc aag gcc ttc tct act tgt ggc tcc cac ctc tct gtg	768
Lys Gly Ile Cys Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ser Val	
245 250 255	
gtg tca ctg ttc tat ggg acc gtt att ggt ctc tac tta tgc cca tca	816
Val Ser Leu Phe Tyr Gly Thr Val Ile Gly Leu Tyr Leu Cys Pro Ser	
260 265 270	
gct aat agt tct act cta aag gac act gtc atg gct atg atg tac act	864
Ala Asn Ser Ser Thr Leu Lys Asp Thr Val Met Ala Met Met Tyr Thr	
275 280 285	
gtg gtg acc cct atg ctg acc ccc ttc atc tac agc ctg agg aac aga	912
Val Val Thr Pro Met Leu Thr Pro Phe Ile Tyr Ser Leu Arg Asn Arg	
290 295 300	
gac atg aag gga gcc ctg gaa agg gtc att tgt aaa agg aaa aat ccc	960
Asp Met Lys Gly Ala Leu Glu Arg Val Ile Cys Lys Arg Lys Asn Pro	
305 310 315 320	
ttc ctt cta tga	972
Phe Leu Leu	

<210> 488  
 <211> 323  
 <212> PRT  
 <213> Homo Sapiens

<400> 488  
 Met Met Gly Gln Asn Gln Thr Ser Ile Ser Asp Phe Leu Leu Leu Gly  
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Leu Pro Ile Gln Pro Glu Gln Gln Asn Leu Cys Tyr Ala Leu Phe Leu  
 20 25 30

Ala Met Tyr Leu Thr Thr Leu Leu Gly Asn Leu Leu Ile Ile Val Leu  
 35 40 45

Ile Arg Leu Asp Ser His Leu His Thr Pro Val Tyr Leu Phe Leu Ser  
 50 55 60

Asn Leu Ser Phe Ser Asp Leu Cys Phe Ser Ser Val Thr Met Pro Lys  
 65 70 75 80

Leu Leu Gln Asn Met Gln Asn Gln Asp Pro Ser Ile Pro Tyr Ala Asp  
 85 90 95

Cys Leu Thr Gln Met Tyr Phe Phe Leu Tyr Phe Ser Asp Leu Glu Ser  
 100 105 110

Phe Leu Leu Val Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Phe  
 115 120 125

Pro Met His Tyr Thr Ala Ile Cys Phe Leu Leu His Tyr Thr Ala Ile  
 130 135 140

Met Ser Pro Met Leu Cys Leu Ser Val Val Ala Leu Ser Trp Val Leu  
 145 150 155 160

Thr Thr Phe His Ala Met Leu His Thr Leu Leu Met Ala Arg Leu Cys  
 165 170 175

Phe Cys Ala Asp Asn Val Ile Pro His Phe Phe Cys Asp Met Ser Ala  
 180 185 190

Leu Leu Lys Leu Ala Cys Ser Asp Thr Arg Val Asn Glu Trp Val Ile  
 195 200 205

Phe Ile Met Gly Gly Leu Ile Leu Val Ile Pro Phe Leu Leu Ile Leu  
 210 215 220



Gly Ser Tyr Ala Arg Ile Val Ser Ser Ile Leu Lys Val Pro Ser Ser  
225 230 235 240

Lys Gly Ile Cys Lys Ala Phe Ser Thr Cys Gly Ser His Leu Ser Val  
245 250 255

Val Ser Leu Phe Tyr Gly Thr Val Ile Gly Leu Tyr Leu Cys Pro Ser  
260 265 270

Ala Asn Ser Ser Thr Leu Lys Asp Thr Val Met Ala Met Met Tyr Thr  
275 280 285

Val Val Thr Pro Met Leu Thr Pro Phe Ile Tyr Ser Leu Arg Asn Arg  
290 295 300

Asp Met Lys Gly Ala Leu Glu Arg Val Ile Cys Lys Arg Lys Asn Pro  
305 310 315 320

Phe Leu Leu

<210> 489  
<211> 954  
<212> DNA  
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<220>  
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<222> (1)..(951)  
<223>

<400> 489atg gaa gga aag aat caa aca gct cca tct gaa ttc atc atc ttg ggg  
48

Met Glu Gly Lys Asn Gln Thr Ala Pro Ser Glu Phe Ile Ile Leu Gly  
1 5 10 15

ttc gac cac ctg aat gaa ttg cag tat tta ctc ttc acc atc ttc ttt 96  
Phe Asp His Leu Asn Glu Leu Gln Tyr Leu Leu Phe Thr Ile Phe Phe  
20 25 30

ctg acc tac ata tgc act tta gga ggc aat gtt ttt atc att gtg gtg 144  
Leu Thr Tyr Ile Cys Thr Leu Gly Gly Asn Val Phe Ile Ile Val Val  
35 40 45

acc ata gct gat tcc cac cta cac aca ccc atg tat tat ttc cta gga 192  
Thr Ile Ala Asp Ser His Leu His Thr Pro Met Tyr Tyr Phe Leu Gly  
50 55 60

aat ctt gcc ctt att gac atc tgc tac act act act aat gtc ccc cag 240  
Asn Leu Ala Leu Ile Asp Ile Cys Tyr Thr Thr Thr Asn Val Pro Gln  
65 70 75 80

atg atg gtg cat ctt ctg tca gag aag aaa atc att tcc tat gga ggc 288  
 Met Met Val His Leu Leu Ser Glu Lys Lys Ile Ile Ser Tyr Gly Gly  
 85 90 95

tgt gtg acc cag ctc ttt gca ttc att ttc ttt gtt ggc tca gag tgt 336  
 Cys Val Thr Gln Leu Phe Ala Phe Ile Phe Phe Val Gly Ser Glu Cys  
 100 105 110

ctc ctc ctg gca gca atg gca tat gat cga tat att gct atc tgt aag 384  
 Leu Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ile Ala Ile Cys Lys  
 115 120 125

ccg tta agg tac tca ttt att atg aac aag gcc ctg tgc agc tgg tta 432  
 Pro Leu Arg Tyr Ser Phe Ile Met Asn Lys Ala Leu Cys Ser Trp Leu  
 130 135 140

gca gcc tca tgc tgg aca tgt ggg ttt ctc aac tca gtg ttg cac acc 480  
 Ala Ala Ser Cys Trp Thr Cys Gly Phe Leu Asn Ser Val Leu His Thr  
 145 150 155 160

gtt ctg acc ttc cac ctg ccc ttc tgt ggt aac aat cag atc aat tat 528  
 Val Leu Thr Phe His Leu Pro Phe Cys Gly Asn Asn Gln Ile Asn Tyr  
 165 170 175

ttc ttc tgt gac ata cct ccc ttg ctc atc ttg tct tgt ggt gat act 576  
 Phe Phe Cys Asp Ile Pro Pro Leu Leu Ile Leu Ser Cys Gly Asp Thr  
 180 185 190

tcc ctc aat gaa ctg gct ttg ctg tcc att ggg atc ctc ata agc tgg 624  
 Ser Leu Asn Glu Leu Ala Leu Leu Ser Ile Gly Ile Leu Ile Ser Trp  
 195 200 205

act cct ttc ctg tgc atc atc ctt tcc tac ctt tac atc atc tcc acc 672  
 Thr Pro Phe Leu Cys Ile Ile Leu Ser Tyr Leu Tyr Ile Ile Ser Thr  
 210 215 220

atc ctg agg atc cgt tcc tct gag ggg agg cac aaa gcc ttt tcc acc 720  
 Ile Leu Arg Ile Arg Ser Ser Glu Gly Arg His Lys Ala Phe Ser Thr  
 225 230 235 240

tgt gcc tcc cac ctg ctc att gtt att ctc tat tat ggc agt gct atc 768  
 Cys Ala Ser His Leu Leu Ile Val Ile Leu Tyr Tyr Gly Ser Ala Ile  
 245 250 255

ttc acg tat gtg agg ccc atc tca tct tac tct cta gag aaa gat aga 816  
 Phe Thr Tyr Val Arg Pro Ile Ser Ser Tyr Ser Leu Glu Lys Asp Arg  
 260 265 270

ttg atc tca gtg ctg tat agt gtt gtc aca ccc atg ctg aat cct gta 864  
 Leu Ile Ser Val Leu Tyr Ser Val Val Thr Pro Met Leu Asn Pro Val  
 275 280 285

att tat acg cta agg aat aag gac atc aaa gag gct gtg aag gcc ata 912  
 Ile Tyr Thr Leu Arg Asn Lys Asp Ile Lys Glu Ala Val Lys Ala Ile  
 290 295 300

ggg aga aag tgg cag cca cca gtt ttc tct tct gat ata taa 954  
 Gly Arg Lys Trp Gln Pro Pro Val Phe Ser Ser Asp Ile  
 305 310 315

<210> 490  
 <211> 317  
 <212> PRT  
 <213> Homo Sapiens

<400> 490

Met Glu Gly Lys Asn Gln Thr Ala Pro Ser Glu Phe Ile Ile Leu Gly  
 1 5 10 15

Phe Asp His Leu Asn Glu Leu Gln Tyr Leu Leu Phe Thr Ile Phe Phe  
 20 25 30

Leu Thr Tyr Ile Cys Thr Leu Gly Gly Asn Val Phe Ile Ile Val Val  
 35 40 45

Thr Ile Ala Asp Ser His Leu His Thr Pro Met Tyr Tyr Phe Leu Gly  
 50 55 60

Asn Leu Ala Leu Ile Asp Ile Cys Tyr Thr Thr Thr Asn Val Pro Gln  
 65 70 75 80

Met Met Val His Leu Leu Ser Glu Lys Lys Ile Ile Ser Tyr Gly Gly  
 85 90 95

Cys Val Thr Gln Leu Phe Ala Phe Ile Phe Phe Val Gly Ser Glu Cys  
 100 105 110

Leu Leu Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ile Ala Ile Cys Lys  
 115 120 125

Pro Leu Arg Tyr Ser Phe Ile Met Asn Lys Ala Leu Cys Ser Trp Leu  
 130 135 140

Ala Ala Ser Cys Trp Thr Cys Gly Phe Leu Asn Ser Val Leu His Thr  
 145 150 155 160

Val Leu Thr Phe His Leu Pro Phe Cys Gly Asn Asn Gln Ile Asn Tyr  
 165 170 175

Phe Phe Cys Asp Ile Pro Pro Leu Leu Ile Leu Ser Cys Gly Asp Thr  
 180 185 190

Ser Leu Asn Glu Leu Ala Leu Leu Ser Ile Gly Ile Leu Ile Ser Trp  
 195 200 205

Thr Pro Phe Leu Cys Ile Ile Leu Ser Tyr Leu Tyr Ile Ile Ser Thr  
 210 215 220

Ile Leu Arg Ile Arg Ser Ser Glu Gly Arg His Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ala Ser His Leu Leu Ile Val Ile Leu Tyr Tyr Gly Ser Ala Ile  
 245 250 255

Phe Thr Tyr Val Arg Pro Ile Ser Ser Tyr Ser Leu Glu Lys Asp Arg  
 260 265 270

Leu Ile Ser Val Leu Tyr Ser Val Val Thr Pro Met Leu Asn Pro Val  
 275 280 285

Ile Tyr Thr Leu Arg Asn Lys Asp Ile Lys Glu Ala Val Lys Ala Ile  
 290 295 300

Gly Arg Lys Trp Gln Pro Pro Val Phe Ser Ser Asp Ile  
 305 310 315

<210> 491  
 <211> 975  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(975)  
 <223>

<400> 491atg gct gaa gtt aat atc att tat gtc act gta ttc att ctg aaa gga  
 48

Met Ala Glu Val Asn Ile Ile Tyr Val Thr Val Phe Ile Leu Lys Gly  
 1 5 10 15

att acc aac cgg cca gag ctt cag gcc ccg tgc ttt ggg gtg ttt tta 96  
 Ile Thr Asn Arg Pro Glu Leu Gln Ala Pro Cys Phe Gly Val Phe Leu  
 20 25 30

gtt atc tat ctg gtc aca gtg ctg ggc aat ctt ggg ttg att act tta 144  
 Val Ile Tyr Leu Val Thr Val Leu Gly Asn Leu Gly Leu Ile Thr Leu  
 35 40 45

atc aag att gat act cga ctc cac aca cct atg tac tat ttc ctc agc 192  
 Ile Lys Ile Asp Thr Arg Leu His Thr Pro Met Tyr Tyr Phe Leu Ser  
 50 55 60

cac ctg gcc ttt gtt gac ctt tgt tac tcc tct gct att aca ccg aag 240  
 His Leu Ala Phe Val Asp Leu Cys Tyr Ser Ser Ala Ile Thr Pro Lys  
 65 70 75 80

atg atg gtg aat ttt gtt gtg gaa cgc aac acc att cct ttc cat gct 288  
 Met Met Val Asn Phe Val Val Glu Arg Asn Thr Ile Pro Phe His Ala  
 85 90 95

tgt gca acc caa ctg ggt tgt ttt ctc acc ttc atg atc act gag tgt	336
Cys Ala Thr Gln Leu Gly Cys Phe Leu Thr Phe Met Ile Thr Glu Cys	
100 105 110	
ttc ctt cta gcc tcc atg gcc tac gat tgc tat gtc gcc atc tgt agt	384
Phe Leu Leu Ala Ser Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Ser	
115 120 125	
ccc ctg cat tat tca aca ctg atg tca aga aga gtc tgc att caa ctg	432
Pro Leu His Tyr Ser Thr Leu Met Ser Arg Arg Val Cys Ile Gln Leu	
130 135 140	
gtg gca gtt cca tat ata tac agc ttc ctg gtt gcc ctc ttc cac acc	480
Val Ala Val Pro Tyr Ile Tyr Ser Phe Leu Val Ala Leu Phe His Thr	
145 150 155 160	
gtt atc act ttc cgt ctg act tac tgt ggc cca aac tta att aac cat	528
Val Ile Thr Phe Arg Leu Thr Tyr Cys Gly Pro Asn Leu Ile Asn His	
165 170 175	
ttc tat tgt gat gac ctc ccc ttc tta gct ctg tcc tgc tca gac aca	576
Phe Tyr Cys Asp Asp Leu Pro Phe Leu Ala Leu Ser Cys Ser Asp Thr	
180 185 190	
cac atg aag gaa att ctg ata ttt gcc ttt gct ggc ttt gat atg atc	624
His Met Lys Glu Ile Leu Ile Phe Ala Phe Ala Gly Phe Asp Met Ile	
195 200 205	
tct tcc tct tcc att gtc ctc acc tcc tac atc ttt att att gcc gct	672
Ser Ser Ser Ser Ile Val Leu Thr Ser Tyr Ile Phe Ile Ile Ala Ala	
210 215 220	
atc cta agg atc cgc tct act cag ggg caa cac aaa gcc att tcc acc	720
Ile Leu Arg Ile Arg Ser Thr Gln Gly Gln His Lys Ala Ile Ser Thr	
225 230 235 240	
tgt ggc tcc cat atg gtg act gtc act att ttc tat ggc aca ctg atc	768
Cys Gly Ser His Met Val Thr Val Thr Ile Phe Tyr Gly Thr Leu Ile	
245 250 255	
ttt atg tac cta cag ccc aaa tca aat cac tcc ttg gac aca gac aag	816
Phe Met Tyr Leu Gln Pro Lys Ser Asn His Ser Leu Asp Thr Asp Lys	
260 265 270	
atg gct tct gta ttt tac aca gtg gtg atc ccc atg tta aac ccc cta	864
Met Ala Ser Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro Leu	
275 280 285	
atc tat agt cta agg aac aaa gaa gtg aaa gat gcc tca aag aaa gcc	912
Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Asp Ala Ser Lys Lys Ala	
290 295 300	
ttg gat aaa ggt tgt gaa aac tta cag ata tta aca ttt tta aaa ata	960
Leu Asp Lys Gly Cys Glu Asn Leu Gln Ile Leu Thr Phe Leu Lys Ile	
305 310 315 320	
aga aaa ctt tat taa	975
Arg Lys Leu Tyr	

<210> 492  
 <211> 324  
 <212> PRT  
 <213> Homo Sapiens

<400> 492  
 Met Ala Glu Val Asn Ile Ile Tyr Val Thr Val Phe Ile Leu Lys Gly  
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Ile Thr Asn Arg Pro Glu Leu Gln Ala Pro Cys Phe Gly Val Phe Leu  
 20 25 30

Val Ile Tyr Leu Val Thr Val Leu Gly Asn Leu Gly Leu Ile Thr Leu  
 35 40 45

Ile Lys Ile Asp Thr Arg Leu His Thr Pro Met Tyr Tyr Phe Leu Ser  
 50 55 60

His Leu Ala Phe Val Asp Leu Cys Tyr Ser Ser Ala Ile Thr Pro Lys  
 65 70 75 80

Met Met Val Asn Phe Val Val Glu Arg Asn Thr Ile Pro Phe His Ala  
 85 90 95

Cys Ala Thr Gln Leu Gly Cys Phe Leu Thr Phe Met Ile Thr Glu Cys  
 100 105 110

Phe Leu Leu Ala Ser Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Ser  
 115 120 125

Pro Leu His Tyr Ser Thr Leu Met Ser Arg Arg Val Cys Ile Gln Leu  
 130 135 140

Val Ala Val Pro Tyr Ile Tyr Ser Phe Leu Val Ala Leu Phe His Thr  
 145 150 155 160

Val Ile Thr Phe Arg Leu Thr Tyr Cys Gly Pro Asn Leu Ile Asn His  
 165 170 175

Phe Tyr Cys Asp Asp Leu Pro Phe Leu Ala Leu Ser Cys Ser Asp Thr  
 180 185 190

His Met Lys Glu Ile Leu Ile Phe Ala Phe Ala Gly Phe Asp Met Ile  
 195 200 205

Ser Ser Ser Ser Ile Val Leu Thr Ser Tyr Ile Phe Ile Ile Ala Ala  
 210 215 220

Ile Leu Arg Ile Arg Ser Thr Gln Gly Gln His Lys Ala Ile Ser Thr  
225 230 235 240

Cys Gly Ser His Met Val Thr Val Thr Ile Phe Tyr Gly Thr Leu Ile  
245 250 255

Phe Met Tyr Leu Gln Pro Lys Ser Asn His Ser Leu Asp Thr Asp Lys  
260 265 270

Met Ala Ser Val Phe Tyr Thr Val Val Ile Pro Met Leu Asn Pro Leu  
275 280 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Asp Ala Ser Lys Lys Ala  
290 295 300

Leu Asp Lys Gly Cys Glu Asn Leu Gln Ile Leu Thr Phe Leu Lys Ile  
305 310 315 320

Arg Lys Leu Tyr

<210> 493  
<211> 945  
<212> DNA  
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<220>  
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<222> (1) .. (942)  
<223>

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48

Met Ala Arg Lys Asp Met Ala His Ile Asn Cys Thr Gln Ala Thr Glu  
1 5 10 15

ttt att ctt gtg ggc ctc aca gac cat cag gag ttg aag atg ccc ctc 96  
Phe Ile Leu Val Gly Leu Thr Asp His Gln Glu Leu Lys Met Pro Leu  
20 25 30

ttt gtg cta ttc tta tcc atc tac ctc ttc aca gtg gta ggc aac ttg 144  
Phe Val Leu Phe Leu Ser Ile Tyr Leu Phe Thr Val Val Gly Asn Leu  
35 40 45

ggc ttg atc cta ctc att aga gcg gat aca agt ctc aac aca cca atg 192  
Gly Leu Ile Leu Leu Ile Arg Ala Asp Thr Ser Leu Asn Thr Pro Met  
50 55 60

tac ttc ttt ctt agc aac cta gct ttt gtg gat ttc tgt tac tct tct 240  
Tyr Phe Phe Leu Ser Asn Leu Ala Phe Val Asp Phe Cys Tyr Ser Ser  
65 70 75 80

gtc att aca ccc aaa atg ctt ggg aat ttc ttg tac aaa caa aat gtt 288  
 Val Ile Thr Pro Lys Met Leu Gly Asn Phe Leu Tyr Lys Gln Asn Val  
 85 90 95

ata tcc ttt gat gca tgt gct act caa ctg ggc tgc ttt ctc acc ttc 336  
 Ile Ser Phe Asp Ala Cys Ala Thr Gln Leu Gly Cys Phe Leu Thr Phe  
 100 105 110

atg ata tca gaa tcc ttg cta ctg gct tcc atg gcc tat gac cga tat 384  
 Met Ile Ser Glu Ser Leu Leu Leu Ala Ser Met Ala Tyr Asp Arg Tyr  
 115 120 125

gtg gcc att tgt aac cct cta ttg tat atg gtt gta atg act cca gga 432  
 Val Ala Ile Cys Asn Pro Leu Leu Tyr Met Val Val Met Thr Pro Gly  
 130 135 140

atc tgc att caa ctt gta gca gtt cct tat agc tat agc ttc cta atg 480  
 Ile Cys Ile Gln Leu Val Ala Val Pro Tyr Ser Tyr Ser Phe Leu Met  
 145 150 155 160

gca cta ttt cac acc atc ctc acc ttc cgc ctc tcc tat tgc cac tcc 528  
 Ala Leu Phe His Thr Ile Leu Thr Phe Arg Leu Ser Tyr Cys His Ser  
 165 170 175

aac att gtc aac cat ttc tat tgt gat gac atg cct ctc ctc agg cta 576  
 Asn Ile Val Asn His Phe Tyr Cys Asp Asp Met Pro Leu Leu Arg Leu  
 180 185 190

act tgc tca gac act cgc ttc aaa cag ctc tgg atc ttt gcc tgt gct 624  
 Thr Cys Ser Asp Thr Arg Phe Lys Gln Leu Trp Ile Phe Ala Cys Ala  
 195 200 205

ggt atc atg ttc att tcc tcc ctt ctg att gtc ttt gtc tcc tac atg 672  
 Gly Ile Met Phe Ile Ser Ser Leu Leu Ile Val Phe Val Ser Tyr Met  
 210 215 220

ttc atc att tct gcc atc ctg agg atg cat tca gct gag gga aga cag 720  
 Phe Ile Ile Ser Ala Ile Leu Arg Met His Ser Ala Glu Gly Arg Gln  
 225 230 235 240

aag gct ttc tgc acg tgt ggc tct cac atg ctg gca gtc acc ata ttc 768  
 Lys Ala Phe Ser Thr Cys Gly Ser His Met Leu Ala Val Thr Ile Phe  
 245 250 255

tat ggg acc ctc att ttt atg tac tta cag cct agc tct agc cat gcc 816  
 Tyr Gly Thr Leu Ile Phe Met Tyr Leu Gln Pro Ser Ser Ser His Ala  
 260 265 270

ctg gac aca gac aag atg gcc tct gtc ttc tac aca gtg atc att ccc 864  
 Leu Asp Thr Asp Lys Met Ala Ser Val Phe Tyr Thr Val Ile Ile Pro  
 275 280 285

atg ttg aat ccc tta atc tat agc ctc cag aat aag gag gtg aaa gaa 912  
 Met Leu Asn Pro Leu Ile Tyr Ser Leu Gln Asn Lys Glu Val Lys Glu  
 290 295 300

gct ctg aag aaa atc att atc aat aaa aac tag 945  
 Ala Leu Lys Lys Ile Ile Ile Asn Lys Asn  
 305 310



<210> 494  
 <211> 314  
 <212> PRT  
 <213> Homo Sapiens

<400> 494

Met Ala Arg Lys Asp Met Ala His Ile Asn Cys Thr Gln Ala Thr Glu  
 1 5 10 15

Phe Ile Leu Val Gly Leu Thr Asp His Gln Glu Leu Lys Met Pro Leu  
 20 25 30

Phe Val Leu Phe Leu Ser Ile Tyr Leu Phe Thr Val Val Gly Asn Leu  
 35 40 45

Gly Leu Ile Leu Leu Ile Arg Ala Asp Thr Ser Leu Asn Thr Pro Met  
 50 55 60

Tyr Phe Phe Leu Ser Asn Leu Ala Phe Val Asp Phe Cys Tyr Ser Ser  
 65 70 75 80

Val Ile Thr Pro Lys Met Leu Gly Asn Phe Leu Tyr Lys Gln Asn Val  
 85 90 95

Ile Ser Phe Asp Ala Cys Ala Thr Gln Leu Gly Cys Phe Leu Thr Phe  
 100 105 110

Met Ile Ser Glu Ser Leu Leu Leu Ala Ser Met Ala Tyr Asp Arg Tyr  
 115 120 125

Val Ala Ile Cys Asn Pro Leu Leu Tyr Met Val Val Met Thr Pro Gly  
 130 135 140

Ile Cys Ile Gln Leu Val Ala Val Pro Tyr Ser Tyr Ser Phe Leu Met  
 145 150 155 160

Ala Leu Phe His Thr Ile Leu Thr Phe Arg Leu Ser Tyr Cys His Ser  
 165 170 175

Asn Ile Val Asn His Phe Tyr Cys Asp Asp Met Pro Leu Leu Arg Leu  
 180 185 190

Thr Cys Ser Asp Thr Arg Phe Lys Gln Leu Trp Ile Phe Ala Cys Ala  
 195 200 205

Gly Ile Met Phe Ile Ser Ser Leu Leu Ile Val Phe Val Ser Tyr Met  
 210 215 220

Phe Ile Ile Ser Ala Ile Leu Arg Met His Ser Ala Glu Gly Arg Gln  
 225 230 235 240

Lys Ala Phe Ser Thr Cys Gly Ser His Met Leu Ala Val Thr Ile Phe  
 245 250 255

Tyr Gly Thr Leu Ile Phe Met Tyr Leu Gln Pro Ser Ser Ser His Ala  
 260 265 270

Leu Asp Thr Asp Lys Met Ala Ser Val Phe Tyr Thr Val Ile Ile Pro  
 275 280 285

Met Leu Asn Pro Leu Ile Tyr Ser Leu Gln Asn Lys Glu Val Lys Glu  
 290 295 300

Ala Leu Lys Lys Ile Ile Ile Asn Lys Asn  
 305 310

<210> 495  
 <211> 945  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(942)  
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<400> 495atg gag aac aac aca gag gtg act gaa ttc atc ctt gtg ggg tta act  
 48

Met Glu Asn Asn Thr Glu Val Thr Glu Phe Ile Leu Val Gly Leu Thr  
 1 5 10 15

gat gac cca gaa ctg cag atc cca ctc ttc ata gtc ttc ctt ttc atc 96  
 Asp Asp Pro Glu Leu Gln Ile Pro Leu Phe Ile Val Phe Leu Phe Ile  
 20 25 30

tac ctc atc act ctg gtt ggg aac ctg ggg atg att gaa ttg att cta 144  
 Tyr Leu Ile Thr Leu Val Gly Asn Leu Gly Met Ile Glu Leu Ile Leu  
 35 40 45

ctg gac tcc tgt ctc cac acc ccc atg tac ttc ttc ctc agt aac ctc 192  
 Leu Asp Ser Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser Asn Leu  
 50 55 60

tcc ctg gtg gac ttt ggt tat tcc tca gct gtc act ccc aag gtg atg 240  
 Ser Leu Val Asp Phe Gly Tyr Ser Ser Ala Val Thr Pro Lys Val Met  
 65 70 75 80

gtg ggg ttt ctc aca gga gac aaa ttc ata tta tat aat gct tgt gcc 288  
 Val Gly Phe Leu Thr Gly Asp Lys Phe Ile Leu Tyr Asn Ala Cys Ala  
 85 90 95

aca caa ttc ttc ttc ttt gta gcc ttt atc act gca gaa agt ttc ctc 336  
 Thr Gln Phe Phe Phe Phe Val Ala Phe Ile Thr Ala Glu Ser Phe Leu  
 100 105 110

ctg gca tca atg gcc tat gac cgc tat gca gca ttg tgt aaa ccc ctg 384  
 Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Leu Cys Lys Pro Leu  
 115 120 125

cat tac acc acc acc atg aca aca aat gta tgt gct tgc ctg gcc ata 432  
 His Tyr Thr Thr Thr Met Thr Thr Asn Val Cys Ala Cys Leu Ala Ile  
 130 135 140

ggc tcc tac atc tgt ggt ttc ctg aat gca tcc att cat act ggg aac 480  
 Gly Ser Tyr Ile Cys Gly Phe Leu Asn Ala Ser Ile His Thr Gly Asn  
 145 150 155 160

act ttc agg ctc tcc ttc tgt aga tcc aat gta gtt gaa cac ttt ttc 528  
 Thr Phe Arg Leu Ser Phe Cys Arg Ser Asn Val Val Glu His Phe Phe  
 165 170 175

tgt gat gct cct cct ctc ttg act ctc tca tgt tca gac aac tac atc 576  
 Cys Asp Ala Pro Pro Leu Leu Thr Leu Ser Cys Ser Asp Asn Tyr Ile  
 180 185 190

agt gag atg gtt att ttt ttt gtg gtg gga ttc aat gac ctc ttt tct 624  
 Ser Glu Met Val Ile Phe Phe Val Val Gly Phe Asn Asp Leu Phe Ser  
 195 200 205

atc ctg gta atc ttg atc tcc tac tta ttt ata ttt atc acc atc atg 672  
 Ile Leu Val Ile Leu Ile Ser Tyr Leu Phe Ile Phe Ile Thr Ile Met  
 210 215 220

aag atg cgc tca cct gaa gga cgc cag aag gcc ttt tct act tgt gct 720  
 Lys Met Arg Ser Pro Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys Ala  
 225 230 235 240

tcc cac ctt act gca gtt tcc atc ttt tat ggg aca gga atc ttt atg 768  
 Ser His Leu Thr Ala Val Ser Ile Phe Tyr Gly Thr Gly Ile Phe Met  
 245 250 255

tac tta cga cct aac tcc agc cat ttc atg ggc aca gac aaa atg gca 816  
 Tyr Leu Arg Pro Asn Ser Ser His Phe Met Gly Thr Asp Lys Met Ala  
 260 265 270

tct gtg ttc tat gcc ata gtc att ccc atg ttg aat cca ctg gtc tac 864  
 Ser Val Phe Tyr Ala Ile Val Ile Pro Met Leu Asn Pro Leu Val Tyr  
 275 280 285

agc ctg agg aac aaa gag gtt aag agt gcc ttt aaa aag act gta ggg 912  
 Ser Leu Arg Asn Lys Glu Val Lys Ser Ala Phe Lys Lys Thr Val Gly  
 290 295 300

aag gca aag gcc tct ata gga ttc ata ttt taa 945  
 Lys Ala Lys Ala Ser Ile Gly Phe Ile Phe  
 305 310

&lt;210&gt; 496

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 496

Met Glu Asn Asn Thr Glu Val Thr Glu Phe Ile Leu Val Gly Leu Thr  
 1 5 10 15

Asp Asp Pro Glu Leu Gln Ile Pro Leu Phe Ile Val Phe Leu Phe Ile  
 20 25 30

Tyr Leu Ile Thr Leu Val Gly Asn Leu Gly Met Ile Glu Leu Ile Leu  
 35 40 45

Leu Asp Ser Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser Asn Leu  
 50 55 60

Ser Leu Val Asp Phe Gly Tyr Ser Ser Ala Val Thr Pro Lys Val Met  
 65 70 75 80

Val Gly Phe Leu Thr Gly Asp Lys Phe Ile Leu Tyr Asn Ala Cys Ala  
 85 90 95

Thr Gln Phe Phe Phe Phe Val Ala Phe Ile Thr Ala Glu Ser Phe Leu  
 100 105 110

Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Leu Cys Lys Pro Leu  
 115 120 125

His Tyr Thr Thr Thr Met Thr Thr Asn Val Cys Ala Cys Leu Ala Ile  
 130 135 140

Gly Ser Tyr Ile Cys Gly Phe Leu Asn Ala Ser Ile His Thr Gly Asn  
 145 150 155 160

Thr Phe Arg Leu Ser Phe Cys Arg Ser Asn Val Val Glu His Phe Phe  
 165 170 175

Cys Asp Ala Pro Pro Leu Leu Thr Leu Ser Cys Ser Asp Asn Tyr Ile  
 180 185 190

Ser Glu Met Val Ile Phe Phe Val Val Gly Phe Asn Asp Leu Phe Ser  
 195 200 205

Ile Leu Val Ile Leu Ile Ser Tyr Leu Phe Ile Phe Ile Thr Ile Met  
 210 215 220

Lys Met Arg Ser Pro Glu Gly Arg Gln Lys Ala Phe Ser Thr Cys Ala  
 225 230 235 240

Ser His Leu Thr Ala Val Ser Ile Phe Tyr Gly Thr Gly Ile Phe Met  
 245 250 255

Tyr Leu Arg Pro Asn Ser Ser His Phe Met Gly Thr Asp Lys Met Ala  
 260 265 270

Ser Val Phe Tyr Ala Ile Val Ile Pro Met Leu Asn Pro Leu Val Tyr  
 275 280 285

Ser Leu Arg Asn Lys Glu Val Lys Ser Ala Phe Lys Lys Thr Val Gly  
 290 295 300

Lys Ala Lys Ala Ser Ile Gly Phe Ile Phe  
 305 310

<210> 497  
 <211> 930  
 <212> DNA  
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agt gtc cca gaa cta cag atc ccc ctc ttt atc ttg ttc acc ttc atc 96  
 Ser Val Pro Glu Leu Gln Ile Pro Leu Phe Ile Leu Phe Thr Phe Ile  
 20 25 30

tac ctc ctc act ctg tgt ggg aac ctg ggg atg atg ttg ctg atc ctg 144  
 Tyr Leu Leu Thr Leu Cys Gly Asn Leu Gly Met Met Leu Leu Ile Leu  
 35 40 45

atg gac tct tgt ctc cac acc ccc atg tac ttt ttc ctc agt aac ctg 192  
 Met Asp Ser Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser Asn Leu  
 50 55 60

tct ctg gtg gac ttt gga tac tcc tca gct gtc act ccc aag gtc atg 240  
 Ser Leu Val Asp Phe Gly Tyr Ser Ser Ala Val Thr Pro Lys Val Met  
 65 70 75 80

gct ggg ttc ctt aga gga gac aag gtc atc tcc tac aat gca tgt gct 288  
 Ala Gly Phe Leu Arg Gly Asp Lys Val Ile Ser Tyr Asn Ala Cys Ala  
 85 90 95

gtt cag atg ttc ttc ttt gta gcc ttg gcc acg gtg gaa aat tac ttg 336  
 Val Gln Met Phe Phe Phe Val Ala Leu Ala Thr Val Glu Asn Tyr Leu  
 100 105 110

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 Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys Lys Pro Leu  
 115 120 125

cac tac acc acc acc atg acg gcc agt gta ggt gcc tgt ctg gcc cta 432  
 His Tyr Thr Thr Thr Met Thr Ala Ser Val Gly Ala Cys Leu Ala Leu  
 130 135 140

ggc tca tat gtc tgt ggc ttc cta aat gcc tca ttc cac att ggg ggc 480  
 Gly Ser Tyr Val Cys Gly Phe Leu Asn Ala Ser Phe His Ile Gly Gly  
 145 150 155 160

ata ttc agt ctc tct ttc tgt aaa tcc aat ctg gta cat cac ttt ttc 528  
 Ile Phe Ser Leu Ser Phe Cys Lys Ser Asn Leu Val His His Phe Phe  
 165 170 175

tgt gat gtt cca gca gtc atg gct ctg tct tgc tct gat aaa cac act 576  
 Cys Asp Val Pro Ala Val Met Ala Leu Ser Cys Ser Asp Lys His Thr  
 180 185 190

agt gag gtg att ctg gtt ttt atg tca agc ttt aat atc ttt ttt gtt 624  
 Ser Glu Val Ile Leu Val Phe Met Ser Ser Phe Asn Ile Phe Phe Val  
 195 200 205

ctt cta gtt atc ttt atc tcc tac ttg ttc ata ttc atc acc atc ttg 672  
 Leu Leu Val Ile Phe Ile Ser Tyr Leu Phe Ile Phe Ile Thr Ile Leu  
 210 215 220

aag atg cat tca gct aag gga cac caa aaa gca ttg tcc acc tgt gcc 720  
 Lys Met His Ser Ala Lys Gly His Gln Lys Ala Leu Ser Thr Cys Ala  
 225 230 235 240

tct cac ttc act gca gtc tcc gtc ttc tat ggg aca gta atc ttc atc 768  
 Ser His Phe Thr Ala Val Ser Val Phe Tyr Gly Thr Val Ile Phe Ile  
 245 250 255

tac ttg cag ccc agc tcc agc cac tcc atg gac aca gac aaa atg gca 816  
 Tyr Leu Gln Pro Ser Ser Ser His Ser Met Asp Thr Asp Lys Met Ala  
 260 265 270

tct gtg ttc tat gct atg atc atc ccc atg ctg aac cct gtg gtc tac 864  
 Ser Val Phe Tyr Ala Met Ile Ile Pro Met Leu Asn Pro Val Val Tyr  
 275 280 285

agc ctg agg aac aga gaa gtc cag aat gca ttc aag aaa gtg ttg aga 912  
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 Arg Gln Lys Phe Leu  
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Tyr Leu Leu Thr Leu Cys Gly Asn Leu Gly Met Met Leu Leu Ile Leu	35	40	45
Met Asp Ser Cys Leu His Thr Pro Met Tyr Phe Phe Leu Ser Asn Leu	50	55	60
Ser Leu Val Asp Phe Gly Tyr Ser Ser Ala Val Thr Pro Lys Val Met	65	70	75
Ala Gly Phe Leu Arg Gly Asp Lys Val Ile Ser Tyr Asn Ala Cys Ala	85	90	95
Val Gln Met Phe Phe Phe Val Ala Leu Ala Thr Val Glu Asn Tyr Leu	100	105	110
Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys Lys Pro Leu	115	120	125
His Tyr Thr Thr Thr Met Thr Ala Ser Val Gly Ala Cys Leu Ala Leu	130	135	140
Gly Ser Tyr Val Cys Gly Phe Leu Asn Ala Ser Phe His Ile Gly Gly	145	150	155
Ile Phe Ser Leu Ser Phe Cys Lys Ser Asn Leu Val His His Phe Phe	165	170	175
Cys Asp Val Pro Ala Val Met Ala Leu Ser Cys Ser Asp Lys His Thr	180	185	190
Ser Glu Val Ile Leu Val Phe Met Ser Ser Phe Asn Ile Phe Phe Val	195	200	205
Leu Leu Val Ile Phe Ile Ser Tyr Leu Phe Ile Phe Ile Thr Ile Leu	210	215	220
Lys Met His Ser Ala Lys Gly His Gln Lys Ala Leu Ser Thr Cys Ala	225	230	235
Ser His Phe Thr Ala Val Ser Val Phe Tyr Gly Thr Val Ile Phe Ile	245	250	255

Tyr Leu Gln Pro Ser Ser Ser His Ser Met Asp Thr Asp Lys Met Ala  
 260 265 270

Ser Val Phe Tyr Ala Met Ile Ile Pro Met Leu Asn Pro Val Val Tyr  
 275 280 285

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Arg Gln Lys Phe Leu  
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tat att atc act ctg gtt gga aac ctg gga att att gta ttg ata ttc 144  
 Tyr Ile Ile Thr Leu Val Gly Asn Leu Gly Ile Ile Val Leu Ile Phe  
 35 40 45

tgg gat tcc tgt ctc cac aat ccc atg tac ttt ttt ctc agt aac ttg 192  
 Trp Asp Ser Cys Leu His Asn Pro Met Tyr Phe Phe Leu Ser Asn Leu  
 50 55 60

tct cta gtg gac ttt tgc tac tct tca gct gtc act ccc atc gtc atg 240  
 Ser Leu Val Asp Phe Cys Tyr Ser Ser Ala Val Thr Pro Ile Val Met  
 65 70 75 80

gct gga ttc ctt ata gaa gac aag gtc atc tct tac aat gca tgt gct 288  
 Ala Gly Phe Leu Ile Glu Asp Lys Val Ile Ser Tyr Asn Ala Cys Ala  
 85 90 95

gct caa atg tat atc ttt gta gct ttt gcc act gtg gaa aat tac ctc 336  
 Ala Gln Met Tyr Ile Phe Val Ala Phe Ala Thr Val Glu Asn Tyr Leu  
 100 105 110

ttg gcc tca atg gcc tat gac cgc tat gca gca gtg tgc aaa ccc cta 384  
 Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys Lys Pro Leu  
 115 120 125



cat tac acc aca acc atg aca aca act gtg tgt gct cgt ctg gcc ata 432  
 His Tyr Thr Thr Thr Met Thr Thr Thr Val Cys Ala Arg Leu Ala Ile  
 130 135 140

ggc tcc tac ctc tgt ggt ttc ctg aat gcc tcc atc cac act ggg gac 480  
 Gly Ser Tyr Leu Cys Gly Phe Leu Asn Ala Ser Ile His Thr Gly Asp  
 145 150 155 160

aca ttt agt ctc tct ttc tgt aag tcc aat gaa gtc cat cac ttt ttc 528  
 Thr Phe Ser Leu Ser Phe Cys Lys Ser Asn Glu Val His His Phe Phe  
 165 170 175

tgt gat att cca gca gtc atg gtt ctc tct tgc tct gat aga cat att 576  
 Cys Asp Ile Pro Ala Val Met Val Leu Ser Cys Ser Asp Arg His Ile  
 180 185 190

agc gag ctt gtt ctt att tat gtt gtg agc ttc aat atc ttt ata gct 624  
 Ser Glu Leu Val Leu Ile Tyr Val Val Ser Phe Asn Ile Phe Ile Ala  
 195 200 205

ctc ctg gtt atc ttg ata tcc tac aca ttc att ttt atc acc atc cta 672  
 Leu Leu Val Ile Leu Ile Ser Tyr Thr Phe Ile Phe Ile Thr Ile Leu  
 210 215 220

aag atg cac tca gct tca gta tac cag aag cct ttg tcc acc tgt gcc 720  
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 225 230 235 240

tct cat ttc att gca gtc ggc atc ttc tat ggg act att atc ttc atg 768  
 Ser His Phe Ile Ala Val Gly Ile Phe Tyr Gly Thr Ile Ile Phe Met  
 245 250 255

tac tta caa ccc agc tcc agt cac tcc atg gac aca gac aaa atg gca 816  
 Tyr Leu Gln Pro Ser Ser Ser His Ser Met Asp Thr Asp Lys Met Ala  
 260 265 270

cct gtg ttc tat aca atg gtc atc ccc atg ctg aac cct ctg gtc tat 864  
 Pro Val Phe Tyr Thr Met Val Ile Pro Met Leu Asn Pro Leu Val Tyr  
 275 280 285

agt ctg agg aac aag gaa gtg aag agt gca ttc aag aaa gtt gtt gag 912  
 Ser Leu Arg Asn Lys Glu Val Lys Ser Ala Phe Lys Lys Val Val Glu  
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aag gca aaa ttg tct gta gga tgg tca gtt taa 945  
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20 25 30  
 Tyr Ile Ile Thr Leu Val Gly Asn Leu Gly Ile Ile Val Leu Ile Phe  
 35 40 45  
 Trp Asp Ser Cys Leu His Asn Pro Met Tyr Phe Phe Leu Ser Asn Leu  
 50 55 60  
 Ser Leu Val Asp Phe Cys Tyr Ser Ser Ala Val Thr Pro Ile Val Met  
 65 70 75 80  
 Ala Gly Phe Leu Ile Glu Asp Lys Val Ile Ser Tyr Asn Ala Cys Ala  
 85 90 95  
 Ala Gln Met Tyr Ile Phe Val Ala Phe Ala Thr Val Glu Asn Tyr Leu  
 100 105 110  
 Leu Ala Ser Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys Lys Pro Leu  
 115 120 125  
 His Tyr Thr Thr Thr Met Thr Thr Thr Val Cys Ala Arg Leu Ala Ile  
 130 135 140  
 Gly Ser Tyr Leu Cys Gly Phe Leu Asn Ala Ser Ile His Thr Gly Asp  
 145 150 155 160  
 Thr Phe Ser Leu Ser Phe Cys Lys Ser Asn Glu Val His His Phe Phe  
 165 170 175  
 Cys Asp Ile Pro Ala Val Met Val Leu Ser Cys Ser Asp Arg His Ile  
 180 185 190  
 Ser Glu Leu Val Leu Ile Tyr Val Val Ser Phe Asn Ile Phe Ile Ala  
 195 200 205  
 Leu Leu Val Ile Leu Ile Ser Tyr Thr Phe Ile Phe Ile Thr Ile Leu  
 210 215 220  
 Lys Met His Ser Ala Ser Val Tyr Gln Lys Pro Leu Ser Thr Cys Ala  
 225 230 235 240  
 Ser His Phe Ile Ala Val Gly Ile Phe Tyr Gly Thr Ile Ile Phe Met  
 245 250 255  
 Tyr Leu Gln Pro Ser Ser Ser His Ser Met Asp Thr Asp Lys Met Ala  
 260 265 270

Pro Val Phe Tyr Thr Met Val Ile Pro Met Leu Asn Pro Leu Val Tyr  
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aat caa cct gaa ctc caa gtg atg ata ttc atc ttt ctg ttc ctc acc 96  
 Asn Gln Pro Glu Leu Gln Val Met Ile Phe Ile Phe Leu Phe Leu Thr  
 20 25 30

tac atg cta agt atc cta gga aat ctg act att atc acc ctc acc tta 144  
 Tyr Met Leu Ser Ile Leu Gly Asn Leu Thr Ile Ile Thr Leu Thr Leu  
 35 40 45

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tcc ttc tta gaa att tcc ttc aca tcc att ttt att ccc aga ttt ctg 240  
 Ser Phe Leu Glu Ile Ser Phe Thr Ser Ile Phe Ile Pro Arg Phe Leu  
 65 70 75 80

acc agc atg aca aca gga aat aaa gtt atc agc ttt gct ggc tgc ttg 288  
 Thr Ser Met Thr Thr Gly Asn Lys Val Ile Ser Phe Ala Gly Cys Leu  
 85 90 95

act cag tat ttt ttt gct ata ttt ctt gga gct acc gag ttt tac ctc 336  
 Thr Gln Tyr Phe Phe Ala Ile Phe Leu Gly Ala Thr Glu Phe Tyr Leu  
 100 105 110

ctg gcc tcc atg tct tat gat cgt tat gtg gcc atc tgc aaa ccc ttg 384  
 Leu Ala Ser Met Ser Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125

cat tac ctg act att atg agc agc aga gtc tgc ata caa cta gtg ttc 432  
 His Tyr Leu Thr Ile Met Ser Ser Arg Val Cys Ile Gln Leu Val Phe  
 130 135 140

tgc tcc tgg ttg ggg gga ttc cta gca atc tta cca cca atc atc ctg 480  
 Cys Ser Trp Leu Gly Gly Phe Leu Ala Ile Leu Pro Pro Ile Ile Leu  
 145 150 155 160  
 atg acc cag gta gat ttc tgt gtc tcc aac att ctg aat cac tat tac 528  
 Met Thr Gln Val Asp Phe Cys Val Ser Asn Ile Leu Asn His Tyr Tyr  
 165 170 175  
 tgt gac tat ggg cct ctc gtg gag ctt gcc tgc tca gac aca agc ctc 576  
 Cys Asp Tyr Gly Pro Leu Val Glu Leu Ala Cys Ser Asp Thr Ser Leu  
 180 185 190  
 tta gaa ctg atg gtc atc ctc ttg gcc gtt gtg act ctc atg gtt act 624  
 Leu Glu Leu Met Val Ile Leu Leu Ala Val Val Thr Leu Met Val Thr  
 195 200 205  
 ctg gtg ctg gtg aca ctt tct tac aca tac att atc agg act att ctg 672  
 Leu Val Leu Val Thr Leu Ser Tyr Thr Tyr Ile Ile Arg Thr Ile Leu  
 210 215 220  
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 Arg Ile Pro Ser Ala Gln Gln Arg Thr Lys Ala Phe Ser Thr Cys Ser  
 225 230 235 240  
 tcc cac atg att gtc atc tcc ctc tct tat ggc agc tgc atg ttt atg 768  
 Ser His Met Ile Val Ile Ser Leu Ser Tyr Gly Ser Cys Met Phe Met  
 245 250 255  
 tac att aat cct tct gca aaa gaa gga ggt gct ttc aac aaa gga ata 816  
 Tyr Ile Asn Pro Ser Ala Lys Glu Gly Gly Ala Phe Asn Lys Gly Ile  
 260 265 270  
 gct gta ctc att act tcg gtt act ccc tta ctg aat ccc ttc ata tat 864  
 Ala Val Leu Ile Thr Ser Val Thr Pro Leu Leu Asn Pro Phe Ile Tyr  
 275 280 285  
 act tta aga aat cag caa gtg aaa caa gct ttc aag gac tca gtc aaa 912  
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Tyr Met Leu Ser Ile Leu Gly Asn Leu Thr Ile Ile Thr Leu Thr Leu

35

40

45

Leu Asp Pro His Leu Gln Thr Pro Met Tyr Phe Phe Leu Arg Asn Phe  
 50 55 60

Ser Phe Leu Glu Ile Ser Phe Thr Ser Ile Phe Ile Pro Arg Phe Leu  
 65 70 75 80

Thr Ser Met Thr Thr Gly Asn Lys Val Ile Ser Phe Ala Gly Cys Leu  
 85 90 95

Thr Gln Tyr Phe Phe Ala Ile Phe Leu Gly Ala Thr Glu Phe Tyr Leu  
 100 105 110

Leu Ala Ser Met Ser Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125

His Tyr Leu Thr Ile Met Ser Ser Arg Val Cys Ile Gln Leu Val Phe  
 130 135 140

Cys Ser Trp Leu Gly Gly Phe Leu Ala Ile Leu Pro Pro Ile Ile Leu  
 145 150 155 160

Met Thr Gln Val Asp Phe Cys Val Ser Asn Ile Leu Asn His Tyr Tyr  
 165 170 175

Cys Asp Tyr Gly Pro Leu Val Glu Leu Ala Cys Ser Asp Thr Ser Leu  
 180 185 190

Leu Glu Leu Met Val Ile Leu Leu Ala Val Val Thr Leu Met Val Thr  
 195 200 205

Leu Val Leu Val Thr Leu Ser Tyr Thr Tyr Ile Ile Arg Thr Ile Leu  
 210 215 220

Arg Ile Pro Ser Ala Gln Gln Arg Thr Lys Ala Phe Ser Thr Cys Ser  
 225 230 235 240

Ser His Met Ile Val Ile Ser Leu Ser Tyr Gly Ser Cys Met Phe Met  
 245 250 255

Tyr Ile Asn Pro Ser Ala Lys Glu Gly Gly Ala Phe Asn Lys Gly Ile  
 260 265 270

Ala Val Leu Ile Thr Ser Val Thr Pro Leu Leu Asn Pro Phe Ile Tyr  
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Thr Leu Arg Asn Gln Gln Val Lys Gln Ala Phe Lys Asp Ser Val Lys  
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Lys Ile Val Lys Leu  
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 Asp Val Pro Glu Leu Gln Val Ala Val Phe Thr Phe Leu Phe Leu Ala  
 20 25 30

tat tta ctc agc atc ctt gga aat ctg act atc ctc atc ctc acc ttg 144  
 Tyr Leu Leu Ser Ile Leu Gly Asn Leu Thr Ile Leu Ile Leu Thr Leu  
 35 40 45

ctg gac tcc cac ctt cag act ccc atg tat ttc ttt ctc cgg aac ttc 192  
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 50 55 60

tcc ttc ttg gaa att tcc ttc aca aac atc ttc att cca agg gtc ctg 240  
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 65 70 75 80

att agc atc aca aca ggg aac aag agt atc agc ttt gct ggc tgc ttc 288  
 Ile Ser Ile Thr Thr Gly Asn Lys Ser Ile Ser Phe Ala Gly Cys Phe  
 85 90 95

act cag tat ttc ttt gcc atg ttc ctt ggg gct aca gag ttt tac ctt 336  
 Thr Gln Tyr Phe Phe Ala Met Phe Leu Gly Ala Thr Glu Phe Tyr Leu  
 100 105 110

ctg gct gcc atg tcc tat gac cgc tat gtg gcc atc tgc aaa cct ctg 384  
 Leu Ala Ala Met Ser Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125

cat tac acc acc atc atg agc agc aga atc tgc atc cag ctg att ttc 432  
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 130 135 140

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 Cys Ser Trp Leu Gly Gly Leu Met Ala Ile Ile Pro Thr Ile Thr Leu  
 145 150 155 160

atg agt cag cag gac ttt tgt gca tcc aac aga ctg aat cat tac ttc 528  
 Met Ser Gln Gln Asp Phe Cys Ala Ser Asn Arg Leu Asn His Tyr Phe  
 165 170 175

tgt gac tat gag cct ctt ctg gaa ctc tca tgt tca gac aca agc ctc 576  
 Cys Asp Tyr Glu Pro Leu Leu Glu Leu Ser Cys Ser Asp Thr Ser Leu  
 180 185 190

ata gag aag gtt gtc ttt ctt gtg gca tct gtg acc ctg gtg gtc act 624  
 Ile Glu Lys Val Val Phe Leu Val Ala Ser Val Thr Leu Val Val Thr  
 195 200 205

ctg gtg cta gtg att ctc tcc tat gca ttc att atc aag act att ctg 672  
 Leu Val Leu Val Ile Leu Ser Tyr Ala Phe Ile Ile Lys Thr Ile Leu  
 210 215 220

aag ctc ccc tct gcc caa caa agg aca aaa gcc ttt tcc aca tgt tct 720  
 Lys Leu Pro Ser Ala Gln Gln Arg Thr Lys Ala Phe Ser Thr Cys Ser  
 225 230 235 240

tcc cac atg att gtc atc tcc ctc tct tac gga agc tgc atg ttt atg 768  
 Ser His Met Ile Val Ile Ser Leu Ser Tyr Gly Ser Cys Met Phe Met  
 245 250 255

tac att aat ccc tct gca aaa gaa ggg gat aca ttc aac aag gga gta 816  
 Tyr Ile Asn Pro Ser Ala Lys Glu Gly Asp Thr Phe Asn Lys Gly Val  
 260 265 270

gct cta ctc att act tca gtt gct cct ttg ttg aac ccc ttt att tac 864  
 Ala Leu Leu Ile Thr Ser Val Ala Pro Leu Leu Asn Pro Phe Ile Tyr  
 275 280 285

acc cta agg aac caa cag gta aaa caa ccc ttc aag gat atg gtc aaa 912  
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Tyr Leu Leu Ser Ile Leu Gly Asn Leu Thr Ile Leu Ile Leu Thr Leu  
 35 40 45

Leu Asp Ser His Leu Gln Thr Pro Met Tyr Phe Phe Leu Arg Asn Phe

50 55 60  
 Ser Phe Leu Glu Ile Ser Phe Thr Asn Ile Phe Ile Pro Arg Val Leu  
 65 70 75 80  
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 85 90 95  
 Thr Gln Tyr Phe Phe Ala Met Phe Leu Gly Ala Thr Glu Phe Tyr Leu  
 100 105 110  
 Leu Ala Ala Met Ser Tyr Asp Arg Tyr Val Ala Ile Cys Lys Pro Leu  
 115 120 125  
 His Tyr Thr Thr Ile Met Ser Ser Arg Ile Cys Ile Gln Leu Ile Phe  
 130 135 140  
 Cys Ser Trp Leu Gly Gly Leu Met Ala Ile Ile Pro Thr Ile Thr Leu  
 145 150 155 160  
 Met Ser Gln Gln Asp Phe Cys Ala Ser Asn Arg Leu Asn His Tyr Phe  
 165 170 175  
 Cys Asp Tyr Glu Pro Leu Leu Glu Leu Ser Cys Ser Asp Thr Ser Leu  
 180 185 190  
 Ile Glu Lys Val Val Phe Leu Val Ala Ser Val Thr Leu Val Val Thr  
 195 200 205  
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 Lys Leu Pro Ser Ala Gln Gln Arg Thr Lys Ala Phe Ser Thr Cys Ser  
 225 230 235 240  
 Ser His Met Ile Val Ile Ser Leu Ser Tyr Gly Ser Cys Met Phe Met  
 245 250 255  
 Tyr Ile Asn Pro Ser Ala Lys Glu Gly Asp Thr Phe Asn Lys Gly Val  
 260 265 270  
 Ala Leu Leu Ile Thr Ser Val Ala Pro Leu Leu Asn Pro Phe Ile Tyr  
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Lys Leu Leu Asn Leu  
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Leu Ser Gln Thr Pro Glu Val Gln Leu Val Leu Phe Val Ile Phe Leu
          20          25          30

tcc ttc tat ttg ttc atc cta cca gga aat atc ctt atc att tgc acc          144
Ser Phe Tyr Leu Phe Ile Leu Pro Gly Asn Ile Leu Ile Ile Cys Thr
          35          40          45

atc agt cta gac cct cat ctg acc tct cct atg tat ttc ctg ttg gct          192
Ile Ser Leu Asp Pro His Leu Thr Ser Pro Met Tyr Phe Leu Leu Ala
          50          55          60

aat ctg gcc ttc ctt gat att tgg tac tct tcc att aca gcc cct gaa          240
Asn Leu Ala Phe Leu Asp Ile Trp Tyr Ser Ser Ile Thr Ala Pro Glu
65          70          75          80

atg ctc ata gac ttc ttt gtg gag agg aag ata att tct ttt gat gga          288
Met Leu Ile Asp Phe Phe Val Glu Arg Lys Ile Ile Ser Phe Asp Gly
          85          90          95

tgc att gca cag ctc ttc ttc tta cac ttt gct ggg gct tgc gag atg          336
Cys Ile Ala Gln Leu Phe Phe Leu His Phe Ala Gly Ala Ser Glu Met
          100          105          110

ttc ttg ctc aca gtg atg gcc ttt gac ctc tac act gct atc tgc cga          384
Phe Leu Leu Thr Val Met Ala Phe Asp Leu Tyr Thr Ala Ile Cys Arg
          115          120          125

ccc ctc cac tat gct acc atc atg aat caa cgt ctc tgc tgt atc ctg          432
Pro Leu His Tyr Ala Thr Ile Met Asn Gln Arg Leu Cys Cys Ile Leu
          130          135          140

gtg gct ctc tcc tgg agg ggg ggc ttc att cat tct atc ata cag gtg          480
Val Ala Leu Ser Trp Arg Gly Gly Phe Ile His Ser Ile Ile Gln Val
145          150          155          160

gct ctc att gtt cga ctt cct ttc tgt ggg ccc aat gag tta gac agt          528
Ala Leu Ile Val Arg Leu Pro Phe Cys Gly Pro Asn Glu Leu Asp Ser
          165          170          175

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tac ttc tgt gac atc aca cag gtt gtc cgg att gcc tgt gcc aac acc 576  
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 180 185 190

ttc cca gag gag tta gtg atg atc tgt agt agt ggt ctg atc tct gtg 624  
 Phe Pro Glu Glu Leu Val Met Ile Cys Ser Ser Gly Leu Ile Ser Val  
 195 200 205

gtg tgt ttg att gct ctg tta atg tcc tat gcc ttc ctt ctg gcc ttg 672  
 Val Cys Leu Ile Ala Leu Leu Met Ser Tyr Ala Phe Leu Leu Ala Leu  
 210 215 220

ttc aag aaa ctt tca ggc tca ggt gag aat acc aac agg gcc atg tcc 720  
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 225 230 235 240

acc tgc tat tcc cac att acc att gtg gtg cta atg ttt ggg cca tcc 768  
 Thr Cys Tyr Ser His Ile Thr Ile Val Val Leu Met Phe Gly Pro Ser  
 245 250 255

atc tac att tat gct cgc cca ttt gac tcg ttt tcc cta gat aaa gtg 816  
 Ile Tyr Ile Tyr Ala Arg Pro Phe Asp Ser Phe Ser Leu Asp Lys Val  
 260 265 270

gtg tct gtg ttc aat act tta ata ttc cct tta cgt aat ccc att att 864  
 Val Ser Val Phe Asn Thr Leu Ile Phe Pro Leu Arg Asn Pro Ile Ile  
 275 280 285

tac aca ttg aga aac aag gaa gta aag gca gcc atg agg aag ttg gtc 912  
 Tyr Thr Leu Arg Asn Lys Glu Val Lys Ala Ala Met Arg Lys Leu Val  
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Ser Phe Tyr Leu Phe Ile Leu Pro Gly Asn Ile Leu Ile Ile Cys Thr  
 35 40 45

Ile Ser Leu Asp Pro His Leu Thr Ser Pro Met Tyr Phe Leu Leu Ala  
 50 55 60

Asn Leu Ala Phe Leu Asp Ile Trp Tyr Ser Ser Ile Thr Ala Pro Glu

65	70	75	80
Met Leu Ile Asp Phe Phe Val Glu Arg Lys Ile Ile Ser Phe Asp Gly	85	90	95
Cys Ile Ala Gln Leu Phe Phe Leu His Phe Ala Gly Ala Ser Glu Met	100	105	110
Phe Leu Leu Thr Val Met Ala Phe Asp Leu Tyr Thr Ala Ile Cys Arg	115	120	125
Pro Leu His Tyr Ala Thr Ile Met Asn Gln Arg Leu Cys Cys Ile Leu	130	135	140
Val Ala Leu Ser Trp Arg Gly Gly Phe Ile His Ser Ile Ile Gln Val	145	150	155
Ala Leu Ile Val Arg Leu Pro Phe Cys Gly Pro Asn Glu Leu Asp Ser	165	170	175
Tyr Phe Cys Asp Ile Thr Gln Val Val Arg Ile Ala Cys Ala Asn Thr	180	185	190
Phe Pro Glu Glu Leu Val Met Ile Cys Ser Ser Gly Leu Ile Ser Val	195	200	205
Val Cys Leu Ile Ala Leu Leu Met Ser Tyr Ala Phe Leu Leu Ala Leu	210	215	220
Phe Lys Lys Leu Ser Gly Ser Gly Glu Asn Thr Asn Arg Ala Met Ser	225	230	235
Thr Cys Tyr Ser His Ile Thr Ile Val Val Leu Met Phe Gly Pro Ser	245	250	255
Ile Tyr Ile Tyr Ala Arg Pro Phe Asp Ser Phe Ser Leu Asp Lys Val	260	265	270
Val Ser Val Phe Asn Thr Leu Ile Phe Pro Leu Arg Asn Pro Ile Ile	275	280	285
Tyr Thr Leu Arg Asn Lys Glu Val Lys Ala Ala Met Arg Lys Leu Val	290	295	300
Thr Lys Tyr Ile Leu Cys Lys Glu Lys	305	310	

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1          5          10          15

ctg act cag tct caa gat att cag ctc ttg gtc ttt gtg ctg atc tta          96
Leu Thr Gln Ser Gln Asp Ile Gln Leu Leu Val Phe Val Leu Ile Leu
20          25          30

att ttc tac ctt atc atc ctc cct gga aat ttt ctc att att ttc acc          144
Ile Phe Tyr Leu Ile Ile Leu Pro Gly Asn Phe Leu Ile Ile Phe Thr
35          40          45

ata agg tca gac cct ggg ctc aca gcc ccc ctc tat tta ttt ctg ggc          192
Ile Arg Ser Asp Pro Gly Leu Thr Ala Pro Leu Tyr Leu Phe Leu Gly
50          55          60

aac ttg gcc ttc ctg gat gca tcc tac tcc ttc att gtg gct ccc agg          240
Asn Leu Ala Phe Leu Asp Ala Ser Tyr Ser Phe Ile Val Ala Pro Arg
65          70          75          80

atg ttg gtg gac ttc ctc tct gag aaa aag gta atc tcc tac aga ggc          288
Met Leu Val Asp Phe Leu Ser Glu Lys Lys Val Ile Ser Tyr Arg Gly
85          90          95

tgc atc act cag ctc ttt ttc ttg cac ttc ctt gga gga ggg gag gga          336
Cys Ile Thr Gln Leu Phe Phe Leu His Phe Leu Gly Gly Gly Glu Gly
100          105          110

tta ctc ctt gtt gtg atg gcc ttt gac cgc tac atc gcc atc tgc cgg          384
Leu Leu Leu Val Val Met Ala Phe Asp Arg Tyr Ile Ala Ile Cys Arg
115          120          125

cct ctg cac tgt tca act gtc atg aac cct aga gcc tgc tat gca atg          432
Pro Leu His Cys Ser Thr Val Met Asn Pro Arg Ala Cys Tyr Ala Met
130          135          140

atg ttg gct ctg tgg ctt ggg ggt ttt gtc cac tcc att atc cag gtg          480
Met Leu Ala Leu Trp Leu Gly Gly Phe Val His Ser Ile Ile Gln Val
145          150          155          160

gtc ctc atc ctc cgc ttg cct ttt tgt ggc cca aac cag ctg gac aac          528
Val Leu Ile Leu Arg Leu Pro Phe Cys Gly Pro Asn Gln Leu Asp Asn
165          170          175

ttc ttc tgt gat gtc cga cag gtc atc aag ctg gct tgc acc gac atg          576
Phe Phe Cys Asp Val Arg Gln Val Ile Lys Leu Ala Cys Thr Asp Met
180          185          190

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ttt gtg gtg gag ctt cta atg gtc ttc aac agt ggc ctg atg aca ctc 624  
 Phe Val Val Glu Leu Leu Met Val Phe Asn Ser Gly Leu Met Thr Leu  
 195 200 205

ctg tgc ttt ctg ggg ctt ctg gct tcc tat gca gtc atc ctc tgc cat 672  
 Leu Cys Phe Leu Gly Leu Leu Ala Ser Tyr Ala Val Ile Leu Cys His  
 210 215 220

gtt cgt agg gca gct tct gaa ggg aag aac aag gcc atg tcc acg tgc 720  
 Val Arg Arg Ala Ala Ser Glu Gly Lys Asn Lys Ala Met Ser Thr Cys  
 225 230 235 240

acc act cgt gtc att att ata ctt ctt atg ttt gga cct gct atc ttc 768  
 Thr Thr Arg Val Ile Ile Ile Leu Leu Met Phe Gly Pro Ala Ile Phe  
 245 250 255

atc tac atg tgc cct ttc agg gcc tta cca gct gac aag atg gtt tct 816  
 Ile Tyr Met Cys Pro Phe Arg Ala Leu Pro Ala Asp Lys Met Val Ser  
 260 265 270

ctc ttt cac aca gtg atc ttt cca ttg atg aat cct atg att tat acc 864  
 Leu Phe His Thr Val Ile Phe Pro Leu Met Asn Pro Met Ile Tyr Thr  
 275 280 285

ctt cgc aac cag gaa gtg aaa act tcc atg aag agg tta ttg agt cga 912  
 Leu Arg Asn Gln Glu Val Lys Thr Ser Met Lys Arg Leu Leu Ser Arg  
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cat gta gtc tgt caa gtg gat ttt ata ata aga aac tga 951  
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 20 25 30

Ile Phe Tyr Leu Ile Ile Leu Pro Gly Asn Phe Leu Ile Ile Phe Thr  
 35 40 45

Ile Arg Ser Asp Pro Gly Leu Thr Ala Pro Leu Tyr Leu Phe Leu Gly  
 50 55 60

Asn Leu Ala Phe Leu Asp Ala Ser Tyr Ser Phe Ile Val Ala Pro Arg  
 65 70 75 80

Met Leu Val Asp Phe Leu Ser Glu Lys Lys Val Ile Ser Tyr Arg Gly

85

90

95

Cys Ile Thr Gln Leu Phe Phe Leu His Phe Leu Gly Gly Gly Glu Gly  
 100 105 110

Leu Leu Leu Val Val Met Ala Phe Asp Arg Tyr Ile Ala Ile Cys Arg  
 115 120 125

Pro Leu His Cys Ser Thr Val Met Asn Pro Arg Ala Cys Tyr Ala Met  
 130 135 140

Met Leu Ala Leu Trp Leu Gly Gly Phe Val His Ser Ile Ile Gln Val  
 145 150 155 160

Val Leu Ile Leu Arg Leu Pro Phe Cys Gly Pro Asn Gln Leu Asp Asn  
 165 170 175

Phe Phe Cys Asp Val Arg Gln Val Ile Lys Leu Ala Cys Thr Asp Met  
 180 185 190

Phe Val Val Glu Leu Leu Met Val Phe Asn Ser Gly Leu Met Thr Leu  
 195 200 205

Leu Cys Phe Leu Gly Leu Leu Ala Ser Tyr Ala Val Ile Leu Cys His  
 210 215 220

Val Arg Arg Ala Ala Ser Glu Gly Lys Asn Lys Ala Met Ser Thr Cys  
 225 230 235 240

Thr Thr Arg Val Ile Ile Ile Leu Leu Met Phe Gly Pro Ala Ile Phe  
 245 250 255

Ile Tyr Met Cys Pro Phe Arg Ala Leu Pro Ala Asp Lys Met Val Ser  
 260 265 270

Leu Phe His Thr Val Ile Phe Pro Leu Met Asn Pro Met Ile Tyr Thr  
 275 280 285

Leu Arg Asn Gln Glu Val Lys Thr Ser Met Lys Arg Leu Leu Ser Arg  
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His Val Val Cys Gln Val Asp Phe Ile Ile Arg Asn  
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&lt;211&gt; 918

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ctg tcc ttc ctt ggg gtc agc ctg gtt tat ggt ttg atc atc act ggg 96  
Leu Ser Phe Leu Gly Val Ser Leu Val Tyr Gly Leu Ile Ile Thr Gly  
20 25 30

aac att ctc att gtg gtg tcc att cac aca gaa acc tgt cta tgc aca 144  
Asn Ile Leu Ile Val Val Ser Ile His Thr Glu Thr Cys Leu Cys Thr  
35 40 45

tcc atg tac tat ttc ctg ggc agc ctt tct ggg att gaa ata tgc tac 192  
Ser Met Tyr Tyr Phe Leu Gly Ser Leu Ser Gly Ile Glu Ile Cys Tyr  
50 55 60

act gca gtg gtg gtg ccc cat atc ctg gcc aac acc cta cag tca gag 240  
Thr Ala Val Val Val Pro His Ile Leu Ala Asn Thr Leu Gln Ser Glu  
65 70 75 80

aag acc atc act ctc ctg ggc tgt gcc acc cag atg gct ttc ttc att 288  
Lys Thr Ile Thr Leu Leu Gly Cys Ala Thr Gln Met Ala Phe Phe Ile  
85 90 95

gca ctg ggc agt gct gat tgc ttc ctc ttg gct gcc atg gcc tat gac 336  
Ala Leu Gly Ser Ala Asp Cys Phe Leu Leu Ala Ala Met Ala Tyr Asp  
100 105 110

cgc tat gtg gcc att tgc cac ccg ttg cag tac cct ctc ctc atg aca 384  
Arg Tyr Val Ala Ile Cys His Pro Leu Gln Tyr Pro Leu Leu Met Thr  
115 120 125

ttg act ctt tgt gtc cac ttg gtt gtg gca tca gtc atc agt ggt ctg 432  
Leu Thr Leu Cys Val His Leu Val Val Ala Ser Val Ile Ser Gly Leu  
130 135 140

ttc ctg tcc tta caa ctg gtg gcc ttc atc ttc tct ctg cca ttc tgc 480  
Phe Leu Ser Leu Gln Leu Val Ala Phe Ile Phe Ser Leu Pro Phe Cys  
145 150 155 160

cag gct cag ggc att gag cac ttc ttt tgt gat gtg cca cca gtc atg 528  
Gln Ala Gln Gly Ile Glu His Phe Phe Cys Asp Val Pro Pro Val Met  
165 170 175

cat gtt gtt tgt gct cag agt cac att cat gag cag tca gtg ctg gtg 576  
His Val Val Cys Ala Gln Ser His Ile His Glu Gln Ser Val Leu Val  
180 185 190

gca gcc ata cta gcc att gct gtg cct ttc ttc ctc atc acc acc tcc 624  
Ala Ala Ile Leu Ala Ile Ala Val Pro Phe Phe Leu Ile Thr Thr Ser  
195 200 205

tac acc ttc ata gtg gct gct ctg ctc aag atc cac tcg gct gct ggc 672  
 Tyr Thr Phe Ile Val Ala Ala Leu Leu Lys Ile His Ser Ala Ala Gly  
 210 215 220

cgc cac cgg gcc ttc tcc acc tgc tot tcc cac ctc act gtg gtg ctg 720  
 Arg His Arg Ala Phe Ser Thr Cys Ser Ser His Leu Thr Val Val Leu  
 225 230 235 240

ctg cag tat ggc tgc tgt gcc ttc atg tac ctg tgc ccc agc tcc agc 768  
 Leu Gln Tyr Gly Cys Cys Ala Phe Met Tyr Leu Cys Pro Ser Ser Ser  
 245 250 255

tac aac ccc aag caa gat cgg ttc atc tca ctg gtg tac aca ttg gga 816  
 Tyr Asn Pro Lys Gln Asp Arg Phe Ile Ser Leu Val Tyr Thr Leu Gly  
 260 265 270

acc cca ctg ctc aac cca ctt atc tat gcc ctg agg aac agt gag atg 864  
 Thr Pro Leu Leu Asn Pro Leu Ile Tyr Ala Leu Arg Asn Ser Glu Met  
 275 280 285

aaa ggg gcc gta ggg aga gtt ctt acc agg aac tgc ctt tcc cag aac 912  
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 Ser  
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Asn Ile Leu Ile Val Val Ser Ile His Thr Glu Thr Cys Leu Cys Thr  
 35 40 45

Ser Met Tyr Tyr Phe Leu Gly Ser Leu Ser Gly Ile Glu Ile Cys Tyr  
 50 55 60

Thr Ala Val Val Val Pro His Ile Leu Ala Asn Thr Leu Gln Ser Glu  
 65 70 75 80

Lys Thr Ile Thr Leu Leu Gly Cys Ala Thr Gln Met Ala Phe Phe Ile  
 85 90 95

Ala Leu Gly Ser Ala Asp Cys Phe Leu Leu Ala Ala Met Ala Tyr Asp



100

105

110

Arg Tyr Val Ala Ile Cys His Pro Leu Gln Tyr Pro Leu Leu Met Thr  
 115 120 125

Leu Thr Leu Cys Val His Leu Val Val Ala Ser Val Ile Ser Gly Leu  
 130 135 140

Phe Leu Ser Leu Gln Leu Val Ala Phe Ile Phe Ser Leu Pro Phe Cys  
 145 150 155 160

Gln Ala Gln Gly Ile Glu His Phe Phe Cys Asp Val Pro Pro Val Met  
 165 170 175

His Val Val Cys Ala Gln Ser His Ile His Glu Gln Ser Val Leu Val  
 180 185 190

Ala Ala Ile Leu Ala Ile Ala Val Pro Phe Phe Leu Ile Thr Thr Ser  
 195 200 205

Tyr Thr Phe Ile Val Ala Ala Leu Leu Lys Ile His Ser Ala Ala Gly  
 210 215 220

Arg His Arg Ala Phe Ser Thr Cys Ser Ser His Leu Thr Val Val Leu  
 225 230 235 240

Leu Gln Tyr Gly Cys Cys Ala Phe Met Tyr Leu Cys Pro Ser Ser Ser  
 245 250 255

Tyr Asn Pro Lys Gln Asp Arg Phe Ile Ser Leu Val Tyr Thr Leu Gly  
 260 265 270

Thr Pro Leu Leu Asn Pro Leu Ile Tyr Ala Leu Arg Asn Ser Glu Met  
 275 280 285

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WO 02/24726

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 Pro Gly Ser Glu Glu Leu His His Ile Leu Phe Ala Ile Phe Phe Phe  
 20 25 30  
 ttc tac ttg gtg aca tta atg gga aac aca gtc atc atc atg att gtc 144  
 Phe Tyr Leu Val Thr Leu Met Gly Asn Thr Val Ile Ile Met Ile Val  
 35 40 45  
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 Cys Val Asp Lys Arg Leu Gln Ser Pro Met Tyr Phe Phe Leu Gly His  
 50 55 60  
 ctc tct gcc ctg gag atc ctg gtc aca acc ata atc gtc ccc gtg atg 240  
 Leu Ser Ala Leu Glu Ile Leu Val Thr Thr Ile Ile Val Pro Val Met  
 65 70 75 80  
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 85 90 95  
 tgt gtt gtc cag ctc ttc ttg tac ctt gct gtg ggg aca aca gag ttc 336  
 Cys Val Val Gln Leu Phe Leu Tyr Leu Ala Val Gly Thr Thr Glu Phe  
 100 105 110  
 gca tta ctt gga gca atg gct gtg gac cgt tat gtg gct gtc tgt aac 384  
 Ala Leu Leu Gly Ala Met Ala Val Asp Arg Tyr Val Ala Val Cys Asn  
 115 120 125  
 cct ctg agg tac aac atc att atg aac aga cac acc tgc aac ttt gtg 432  
 Pro Leu Arg Tyr Asn Ile Ile Met Asn Arg His Thr Cys Asn Phe Val  
 130 135 140  
 gtt ctt gtg tca tgg gtg ttt ggg ttt ctt ttt caa atc tgg ccg gtc 480  
 Val Leu Val Ser Trp Val Phe Gly Phe Leu Phe Gln Ile Trp Pro Val  
 145 150 155 160  
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 165 170 175  
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 Phe Phe Cys Asp Arg Gly Gln Leu Leu Lys Leu Ser Cys Asn Asn Thr  
 180 185 190  
 ctt ttc acg gag ttt atc ctc ttc tta atg gct gtt ttt gtt ctc ttt 624  
 Leu Phe Thr Glu Phe Ile Leu Phe Leu Met Ala Val Phe Val Leu Phe  
 195 200 205  
 ggt tct ttg atc cct aca att gtc tcc aac gcc tac atc atc tcc acc 672  
 Gly Ser Leu Ile Pro Thr Ile Val Ser Asn Ala Tyr Ile Ile Ser Thr  
 210 215 220

att ctc aag atc ccg tca tcc tct ggc cgg agg aaa tcc ttc tcc act 720  
 Ile Leu Lys Ile Pro Ser Ser Ser Gly Arg Arg Lys Ser Phe Ser Thr  
 225 230 235 240

tgt gcc tcc cac ttc acc tgt gtt gtg att ggc tac ggc agc tgc ttg 768  
 Cys Ala Ser His Phe Thr Cys Val Val Ile Gly Tyr Gly Ser Cys Leu  
 245 250 255

ttt ctc tac gtg aaa ccc aag caa acg cag gca gct gat tac aat tgg 816  
 Phe Leu Tyr Val Lys Pro Lys Gln Thr Gln Ala Ala Asp Tyr Asn Trp  
 260 265 270

gta gtt tcc ctg atg gtt tca gta gta act cct ttc ctc aat cct ttc 864  
 Val Val Ser Leu Met Val Ser Val Val Thr Pro Phe Leu Asn Pro Phe  
 275 280 285

atc ttc acc ctc cgg aat gat aaa gtc ata gag gcc ctt cgg gat ggg 912  
 Ile Phe Thr Leu Arg Asn Asp Lys Val Ile Glu Ala Leu Arg Asp Gly  
 290 295 300

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 305 310

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Phe Tyr Leu Val Thr Leu Met Gly Asn Thr Val Ile Ile Met Ile Val  
 35 40 45

Cys Val Asp Lys Arg Leu Gln Ser Pro Met Tyr Phe Phe Leu Gly His  
 50 55 60

Leu Ser Ala Leu Glu Ile Leu Val Thr Thr Ile Ile Val Pro Val Met  
 65 70 75 80

Leu Trp Gly Leu Leu Leu Pro Gly Met Gln Thr Ile Tyr Leu Ser Ala  
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Ile Pro His Thr Glu Gly Leu Glu Met Thr Leu Phe Val Leu Phe Leu  
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35 40 45  
gtt atg tct tct gct cgc ctt cac aca cct atg tat ttc ttc ctg gga 192  
Val Met Ser Ser Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly  
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aac ttg tct gtg ttt gac atg ggt ttc tcc tca gtg act tgt ccc aaa 240  
Asn Leu Ser Val Phe Asp Met Gly Phe Ser Ser Val Thr Cys Pro Lys  
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Met Leu Leu Tyr Leu Met Gly Leu Ser Arg Leu Ile Ser Tyr Lys Asp  
85 90 95  
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Cys Val Cys Gln Leu Phe Phe Phe His Phe Leu Gly Ser Ile Glu Cys  
100 105 110  
ttc ttg ttt acg gtg atg gcc tat gac cgc ttc act gcc atc tgt tat 384  
Phe Leu Phe Thr Val Met Ala Tyr Asp Arg Phe Thr Ala Ile Cys Tyr  
115 120 125  
cct ctg cga tac aca gtc atc atg aac cca agg atc tgt gtg gcc ctg 432  
Pro Leu Arg Tyr Thr Val Ile Met Asn Pro Arg Ile Cys Val Ala Leu  
130 135 140  
gct gtg ggc aca tgg ctg tta ggg tgc att cat tcc agt atc ttg acc 480  
Ala Val Gly Thr Trp Leu Leu Gly Cys Ile His Ser Ser Ile Leu Thr  
145 150 155 160  
tcc ctc acc ttc acc ttg cca tac tgt ggt ccc aat gaa gtg gat cac 528  
Ser Leu Thr Phe Thr Leu Pro Tyr Cys Gly Pro Asn Glu Val Asp His  
165 170 175  
ttc ttc tgt gac att cca gca ctg ttg ccc ttg gcc tgt gct gac aca 576  
Phe Phe Cys Asp Ile Pro Ala Leu Leu Pro Leu Ala Cys Ala Asp Thr  
180 185 190  
tcc tta gcc cag agg gtg agc ttc acc aac gtt ggc ctc ata tct ctt 624  
Ser Leu Ala Gln Arg Val Ser Phe Thr Asn Val Gly Leu Ile Ser Leu  
195 200 205  
gtc tgc ttt ctg cta att ctt tta tcc tac act aga atc aca ata tct 672  
Val Cys Phe Leu Leu Ile Leu Leu Ser Tyr Thr Arg Ile Thr Ile Ser  
210 215 220  
atc tta agc att cgt aca act gag ggc cgt cgc cgt gcc ttc tcc acc 720  
Ile Leu Ser Ile Arg Thr Thr Glu Gly Arg Arg Arg Ala Phe Ser Thr  
225 230 235 240

tgc agt gct cac ctc att gcc atc ctc tgt gcc tat ggg ccc atc atc 768  
 Cys Ser Ala His Leu Ile Ala Ile Leu Cys Ala Tyr Gly Pro Ile Ile  
                   245                                  250                                  255

act gtc tac ctg cag ccc aca ccc aac ccc atg ctg gga acc gtg gta 816  
 Thr Val Tyr Leu Gln Pro Thr Pro Asn Pro Met Leu Gly Thr Val Val  
                   260                                  265                                  270

caa att ctc atg aat ctg gta gga cca atg ctg aac cct ttg atc tat 864  
 Gln Ile Leu Met Asn Leu Val Gly Pro Met Leu Asn Pro Leu Ile Tyr  
                   275                                  280                                  285

acc ttg agg aat aag gaa gta aaa aca gcc ctg aaa aca ata ttg cac 912  
 Thr Leu Arg Asn Lys Glu Val Lys Thr Ala Leu Lys Thr Ile Leu His  
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                   20                                  25                                  30

Pro Phe Tyr Ala Cys Thr Leu Leu Gly Asn Val Ser Ile Leu Val Ala  
                   35                                  40                                  45

Val Met Ser Ser Ala Arg Leu His Thr Pro Met Tyr Phe Phe Leu Gly  
                   50                                  55                                  60

Asn Leu Ser Val Phe Asp Met Gly Phe Ser Ser Val Thr Cys Pro Lys  
   65                                  70                                  75                                  80

Met Leu Leu Tyr Leu Met Gly Leu Ser Arg Leu Ile Ser Tyr Lys Asp  
                   85                                  90                                  95

Cys Val Cys Gln Leu Phe Phe Phe His Phe Leu Gly Ser Ile Glu Cys  
                   100                                  105                                  110

Phe Leu Phe Thr Val Met Ala Tyr Asp Arg Phe Thr Ala Ile Cys Tyr  
                   115                                  120                                  125

Pro Leu Arg Tyr Thr Val Ile Met Asn Pro Arg Ile Cys Val Ala Leu

130

135

140

Ala Val Gly Thr Trp Leu Leu Gly Cys Ile His Ser Ser Ile Leu Thr  
 145 150 155 160

Ser Leu Thr Phe Thr Leu Pro Tyr Cys Gly Pro Asn Glu Val Asp His  
 165 170 175

Phe Phe Cys Asp Ile Pro Ala Leu Leu Pro Leu Ala Cys Ala Asp Thr  
 180 185 190

Ser Leu Ala Gln Arg Val Ser Phe Thr Asn Val Gly Leu Ile Ser Leu  
 195 200 205

Val Cys Phe Leu Leu Ile Leu Leu Ser Tyr Thr Arg Ile Thr Ile Ser  
 210 215 220

Ile Leu Ser Ile Arg Thr Thr Glu Gly Arg Arg Arg Ala Phe Ser Thr  
 225 230 235 240

Cys Ser Ala His Leu Ile Ala Ile Leu Cys Ala Tyr Gly Pro Ile Ile  
 245 250 255

Thr Val Tyr Leu Gln Pro Thr Pro Asn Pro Met Leu Gly Thr Val Val  
 260 265 270

Gln Ile Leu Met Asn Leu Val Gly Pro Met Leu Asn Pro Leu Ile Tyr  
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 290 295 300

Arg Thr Gly His Val Pro Glu Ser  
 305 310

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1	5	10	15	
atg ctt ttt agt ata ttt tta ctt atg tat ttg atg atc ctg atg tgc				96
Met Leu Phe Ser Ile Phe Leu Leu Met Tyr Leu Met Ile Leu Met Cys				
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aat ggc atc ata ata cta cta ata aaa att cac ccc gct ctc cag act				144
Asn Gly Ile Ile Ile Leu Leu Ile Lys Ile His Pro Ala Leu Gln Thr				
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ccc atg tat ttt ttt ctt agc aat ttt tcc ctt ttg gaa atc tgt tat				192
Pro Met Tyr Phe Phe Leu Ser Asn Phe Ser Leu Leu Glu Ile Cys Tyr				
50		55	60	
gta aca atc att atc cca aga atg ctc atg gac att tgg act cag aaa				240
Val Thr Ile Ile Ile Pro Arg Met Leu Met Asp Ile Trp Thr Gln Lys				
65		70	75	80
gga aat att tct ttg ttt gct tgt gct aca caa atg tgt ttt ttt ctt				288
Gly Asn Ile Ser Leu Phe Ala Cys Ala Thr Gln Met Cys Phe Phe Leu				
85		90	95	
atg ctt gga ggc acg gag tgt ctc ctt ctg aca gtg atg gcc tat gac				336
Met Leu Gly Gly Thr Glu Cys Leu Leu Leu Thr Val Met Ala Tyr Asp				
100		105	110	
cgc tac gtg gct att tgt aag cct ttg cag tat cct cta gtg atg aac				384
Arg Tyr Val Ala Ile Cys Lys Pro Leu Gln Tyr Pro Leu Val Met Asn				
115		120	125	
cac aaa gtc tgc att cag ctg ata ata gct tcc tgg acc atc aca att				432
His Lys Val Cys Ile Gln Leu Ile Ile Ala Ser Trp Thr Ile Thr Ile				
130		135	140	
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Pro Val Val Ile Gly Glu Thr Cys Gln Ile Phe Leu Leu Pro Phe Cys				
145		150	155	160
gga act aac aca att aat cat ttc ttt tgt gac atc ccg cca ata ctc				528
Gly Thr Asn Thr Ile Asn His Phe Phe Cys Asp Ile Pro Pro Ile Leu				
165		170	175	
aag ctt gct tgt gga aac ata ttt gtg aat gag ata aca gtc cat gta				576
Lys Leu Ala Cys Gly Asn Ile Phe Val Asn Glu Ile Thr Val His Val				
180		185	190	
gta gcg gtg gtg ttt atc acg gtg cca ttt ctg ttg att gtt gtc tct				624
Val Ala Val Val Phe Ile Thr Val Pro Phe Leu Leu Ile Val Val Ser				
195		200	205	
tat ggc aaa att atc tcc aac att ttg aaa ttg tca tca gcc aga gga				672
Tyr Gly Lys Ile Ile Ser Asn Ile Leu Lys Leu Ser Ser Ala Arg Gly				
210		215	220	
aag gct aaa gcc ttc tcc acc tgc tca tct cac cta ata gtt gta atc				720
Lys Ala Lys Ala Phe Ser Thr Cys Ser Ser His Leu Ile Val Val Ile				
225		230	235	240
tta ttc ttt gga gca ggt act atc act tat tta cag ccc aaa cca cat				768
Leu Phe Phe Gly Ala Gly Thr Ile Thr Tyr Leu Gln Pro Lys Pro His				
245		250	255	



cag ttt caa agg atg ggg aaa ctg att tct ctt ttc tac acc att ctg 816  
 Gln Phe Gln Arg Met Gly Lys Leu Ile Ser Leu Phe Tyr Thr Ile Leu  
                   260                                  265                                  270

att cca act ttg aat cct att ata tat acc ctg agg aac aaa gat atc 864  
 Ile Pro Thr Leu Asn Pro Ile Ile Tyr Thr Leu Arg Asn Lys Asp Ile  
                   275                                  280                                  285

atg gtg gca ttg aga aaa tta cta gct aag tta tta aca tga 906  
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Asn Gly Ile Ile Ile Leu Leu Ile Lys Ile His Pro Ala Leu Gln Thr  
                   35                                  40                                  45

Pro Met Tyr Phe Phe Leu Ser Asn Phe Ser Leu Leu Glu Ile Cys Tyr  
                   50                                  55                                  60

Val Thr Ile Ile Ile Pro Arg Met Leu Met Asp Ile Trp Thr Gln Lys  
 65                                  70                                  75                                  80

Gly Asn Ile Ser Leu Phe Ala Cys Ala Thr Gln Met Cys Phe Phe Leu  
                   85                                  90                                  95

Met Leu Gly Gly Thr Glu Cys Leu Leu Leu Thr Val Met Ala Tyr Asp  
                   100                                  105                                  110

Arg Tyr Val Ala Ile Cys Lys Pro Leu Gln Tyr Pro Leu Val Met Asn  
                   115                                  120                                  125

His Lys Val Cys Ile Gln Leu Ile Ile Ala Ser Trp Thr Ile Thr Ile  
                   130                                  135                                  140

Pro Val Val Ile Gly Glu Thr Cys Gln Ile Phe Leu Leu Pro Phe Cys  
 145                                  150                                  155                                  160

Gly Thr Asn Thr Ile Asn His Phe Phe Cys Asp Ile Pro Pro Ile Leu

165 170 175

Lys Leu Ala Cys Gly Asn Ile Phe Val Asn Glu Ile Thr Val His Val  
180 185 190

Val Ala Val Val Phe Ile Thr Val Pro Phe Leu Leu Ile Val Val Ser  
195 200 205

Tyr Gly Lys Ile Ile Ser Asn Ile Leu Lys Leu Ser Ser Ala Arg Gly  
210 215 220

Lys Ala Lys Ala Phe Ser Thr Cys Ser Ser His Leu Ile Val Val Ile  
225 230 235 240

Leu Phe Phe Gly Ala Gly Thr Ile Thr Tyr Leu Gln Pro Lys Pro His  
245 250 255

Gln Phe Gln Arg Met Gly Lys Leu Ile Ser Leu Phe Tyr Thr Ile Leu  
260 265 270

Ile Pro Thr Leu Asn Pro Ile Ile Tyr Thr Leu Arg Asn Lys Asp Ile  
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Leu Thr Glu Asn Pro Asn Leu Gln Ile Pro Leu Phe Leu Val Thr  
20 25 30

ctg att tat ttc atc act ttg ttg gat aat ttg ggt ata att att tta 144  
Leu Ile Tyr Phe Ile Thr Leu Leu Asp Asn Leu Gly Ile Ile Ile Leu  
35 40 45

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Asn Leu Ser Phe Cys Asp Ile Cys Tyr Ser Thr Val Phe Ala Pro Lys			
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Met Leu Val Asn Phe Leu Ser Lys His Lys Ser Ser Thr Phe Ser Gly			
	85	90	95
tgt gtt cta cag agt ttc cct ttt gca gta tat gta acc aca aag gac			336
Cys Val Leu Gln Ser Phe Pro Phe Ala Val Tyr Val Thr Thr Lys Asp			
	100	105	110
att ctc ctg tcc atg atg gct tat gac cat tac gtg gcc ata gct aat			384
Ile Leu Leu Ser Met Met Ala Tyr Asp His Tyr Val Ala Ile Ala Asn			
	115	120	125
ccc ttg ttg tat aca gtc att atg gcc caa aaa gtt tgt att cag atg			432
Pro Leu Leu Tyr Thr Val Ile Met Ala Gln Lys Val Cys Ile Gln Met			
	130	135	140
gtc ctt gct tct tac tta ggt ggg ctc att aat tcc ctg aca cac aca			480
Val Leu Ala Ser Tyr Leu Gly Gly Leu Ile Asn Ser Leu Thr His Thr			
145	150	155	160
ata ggt ttg ctc aaa tta gac ttc tgt ggt cct aat att gtg aat cat			528
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	165	170	175
tat ttc tgt gat gtt cct cct ctt ctg agg ctt tct tgc tct gat gct			576
Tyr Phe Cys Asp Val Pro Pro Leu Leu Arg Leu Ser Cys Ser Asp Ala			
	180	185	190
cat atc aat gaa atg ctg ccc ttg gtc ttc tct ggg ctc att gca atg			624
His Ile Asn Glu Met Leu Pro Leu Val Phe Ser Gly Leu Ile Ala Met			
	195	200	205
ttc act ttc att gtc att atg gtg tct tat atc tgc atc atc att gcc			672
Phe Thr Phe Ile Val Ile Met Val Ser Tyr Ile Cys Ile Ile Ile Ala			
	210	215	220
atc cag aga atc cat gca gct gag gga agg tac aaa gcc ttc tcc act			720
Ile Gln Arg Ile His Ala Ala Glu Gly Arg Tyr Lys Ala Phe Ser Thr			
225	230	235	240
tgt gtc tcc cac cta acc acg gtg acc tta ttc tat ggg tct gtt tct			768
Cys Val Ser His Leu Thr Thr Val Thr Leu Phe Tyr Gly Ser Val Ser			
	245	250	255
ttt agt tat atc cag cca agt tct cag tat tcc ttg gaa cag gag aag			816
Phe Ser Tyr Ile Gln Pro Ser Ser Gln Tyr Ser Leu Glu Gln Glu Lys			
	260	265	270
gtc ttg gct gtg ttt tat aca ctg gtg atc ccc atg cta aac cca ctt			864
Val Leu Ala Val Phe Tyr Thr Leu Val Ile Pro Met Leu Asn Pro Leu			
	275	280	285
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Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Asp Ala Ala Lys Arg Leu			
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Leu Ile Tyr Phe Ile Thr Leu Leu Asp Asn Leu Gly Ile Ile Ile Leu  
 35 40 45

Ile Trp Leu Asn Ala Gln Leu His Thr Pro Met Tyr Phe Phe Leu Gly  
 50 55 60

Asn Leu Ser Phe Cys Asp Ile Cys Tyr Ser Thr Val Phe Ala Pro Lys  
 65 70 75 80

Met Leu Val Asn Phe Leu Ser Lys His Lys Ser Ser Thr Phe Ser Gly  
 85 90 95

Cys Val Leu Gln Ser Phe Pro Phe Ala Val Tyr Val Thr Thr Lys Asp  
 100 105 110

Ile Leu Leu Ser Met Met Ala Tyr Asp His Tyr Val Ala Ile Ala Asn  
 115 120 125

Pro Leu Leu Tyr Thr Val Ile Met Ala Gln Lys Val Cys Ile Gln Met  
 130 135 140

Val Leu Ala Ser Tyr Leu Gly Gly Leu Ile Asn Ser Leu Thr His Thr  
 145 150 155 160

Ile Gly Leu Leu Lys Leu Asp Phe Cys Gly Pro Asn Ile Val Asn His  
 165 170 175

Tyr Phe Cys Asp Val Pro Pro Leu Leu Arg Leu Ser Cys Ser Asp Ala  
 180 185 190

His Ile Asn Glu Met Leu Pro Leu Val Phe Ser Gly Leu Ile Ala Met

195

200

205

Phe Thr Phe Ile Val Ile Met Val Ser Tyr Ile Cys Ile Ile Ile Ala  
 210 215 220

Ile Gln Arg Ile His Ala Ala Glu Gly Arg Tyr Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Val Ser His Leu Thr Thr Val Thr Leu Phe Tyr Gly Ser Val Ser  
 245 250 255

Phe Ser Tyr Ile Gln Pro Ser Ser Gln Tyr Ser Leu Glu Gln Glu Lys  
 260 265 270

Val Leu Ala Val Phe Tyr Thr Leu Val Ile Pro Met Leu Asn Pro Leu  
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 20 25 30

gct gtt tat atc att aat ttc tca gca aat ctt gga atg ata gtt tta 144  
 Ala Val Tyr Ile Ile Asn Phe Ser Ala Asn Leu Gly Met Ile Val Leu  
 35 40 45

atc aga atg gat tac caa ctt cac aca cca atg tat ttc ttc ctc agt 192  
 Ile Arg Met Asp Tyr Gln Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60

cat ctg tct ttc tgt gat ctc tgc tat tct act gca act ggg ccc aag 240  
 His Leu Ser Phe Cys Asp Leu Cys Tyr Ser Thr Ala Thr Gly Pro Lys

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Met Leu Val Asp	Leu Leu Ala Lys Asn Lys Ser Ile Pro Phe Tyr Gly			
	85	90	95	
tgt gct ctg caa ttc ttg gtc ttc tgt atc ttt gca gat tct gag tgt				336
Cys Ala Leu Gln Phe Leu Val Phe Cys Ile Phe Ala Asp Ser Glu Cys				
	100	105	110	
cta ctg ctg tca gtg atg gcc ttt gat cgg tac aag gcc atc atc aac				384
Leu Leu Leu Ser Val Met Ala Phe Asp Arg Tyr Lys Ala Ile Ile Asn				
	115	120	125	
ccc ctg ctc tat aca gtc aac atg tct agc aga gtg tgc tat cta ctc				432
Pro Leu Leu Tyr Thr Val Asn Met Ser Ser Arg Val Cys Tyr Leu Leu				
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Leu Thr Gly Val Tyr Leu Val Gly Ile Ala Asp Ala Leu Ile His Met				
	145	150	155	160
aca ctg gcc ttc cgc cta tgc ttc tgt ggg tct aat gag att aat cat				528
Thr Leu Ala Phe Arg Leu Cys Phe Cys Gly Ser Asn Glu Ile Asn His				
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ttc ttc tgt gat atc cct cct ctc tta tta ctc tct tgc tca gat aca				576
Phe Phe Cys Asp Ile Pro Pro Leu Leu Leu Leu Ser Cys Ser Asp Thr				
	180	185	190	
cag gtc aat gag tta gtg tta ttc acc gtc ttt ggt ttt att gaa ctg				624
Gln Val Asn Glu Leu Val Leu Phe Thr Val Phe Gly Phe Ile Glu Leu				
	195	200	205	
agt acc att tca gga gtt ttc att tct tat tgt tat atc atc cta tca				672
Ser Thr Ile Ser Gly Val Phe Ile Ser Tyr Cys Tyr Ile Ile Leu Ser				
	210	215	220	
gtc ttg gag ata cac tct gct gag ggg agg ttc aaa gct ctc tct aca				720
Val Leu Glu Ile His Ser Ala Glu Gly Arg Phe Lys Ala Leu Ser Thr				
	225	230	235	240
tgc act tcc cac tta tct gcg gtt gca att ttc cag gga act ctg ctc				768
Cys Thr Ser His Leu Ser Ala Val Ala Ile Phe Gln Gly Thr Leu Leu				
	245	250	255	
ttt atg tat ttc cgg cca agt tct tcc tat tct cta gat caa gat aaa				816
Phe Met Tyr Phe Arg Pro Ser Ser Ser Tyr Ser Leu Asp Gln Asp Lys				
	260	265	270	
atg acc tca ttg ttt tac acc ctt gtg gtt ccc atg ttg aac ccc ctg				864
Met Thr Ser Leu Phe Tyr Thr Leu Val Val Pro Met Leu Asn Pro Leu				
	275	280	285	
att tat agc ctg agg aac aag gat gtg aaa gag gcc ctg aaa aaa ctg				912
Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Glu Ala Leu Lys Lys Leu				
	290	295	300	
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Lys Asn Glu Ile Leu Phe				
	305	310		

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<400> 520

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Ala Val Tyr Ile Ile Asn Phe Ser Ala Asn Leu Gly Met Ile Val Leu  
 35 40 45

Ile Arg Met Asp Tyr Gln Leu His Thr Pro Met Tyr Phe Phe Leu Ser  
 50 55 60

His Leu Ser Phe Cys Asp Leu Cys Tyr Ser Thr Ala Thr Gly Pro Lys  
 65 70 75 80

Met Leu Val Asp Leu Leu Ala Lys Asn Lys Ser Ile Pro Phe Tyr Gly  
 85 90 95

Cys Ala Leu Gln Phe Leu Val Phe Cys Ile Phe Ala Asp Ser Glu Cys  
 100 105 110

Leu Leu Leu Ser Val Met Ala Phe Asp Arg Tyr Lys Ala Ile Ile Asn  
 115 120 125

Pro Leu Leu Tyr Thr Val Asn Met Ser Ser Arg Val Cys Tyr Leu Leu  
 130 135 140

Leu Thr Gly Val Tyr Leu Val Gly Ile Ala Asp Ala Leu Ile His Met  
 145 150 155 160

Thr Leu Ala Phe Arg Leu Cys Phe Cys Gly Ser Asn Glu Ile Asn His  
 165 170 175

Phe Phe Cys Asp Ile Pro Pro Leu Leu Leu Leu Ser Cys Ser Asp Thr  
 180 185 190

Gln Val Asn Glu Leu Val Leu Phe Thr Val Phe Gly Phe Ile Glu Leu  
 195 200 205

Ser Thr Ile Ser Gly Val Phe Ile Ser Tyr Cys Tyr Ile Ile Leu Ser

210 215 220

Val Leu Glu Ile His Ser Ala Glu Gly Arg Phe Lys Ala Leu Ser Thr  
 225 230 235 240

Cys Thr Ser His Leu Ser Ala Val Ala Ile Phe Gln Gly Thr Leu Leu  
 245 250 255

Phe Met Tyr Phe Arg Pro Ser Ser Ser Tyr Ser Leu Asp Gln Asp Lys  
 260 265 270

Met Thr Ser Leu Phe Tyr Thr Leu Val Val Pro Met Leu Asn Pro Leu  
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aat ttt act gaa gtc acc atg ttt ata tta ata agc ttc aca gaa gaa 96  
 Asn Phe Thr Glu Val Thr Met Phe Ile Leu Ile Ser Phe Thr Glu Glu  
 20 25 30

ttt gat gtg caa gtc ttc cta ttt tta tta ttt tta gca atc tat cta 144  
 Phe Asp Val Gln Val Phe Leu Phe Leu Leu Phe Leu Ala Ile Tyr Leu  
 35 40 45

ttc act cta ata ggc aat tta ggg ctg gtt gta ccg atc att ggg gat 192  
 Phe Thr Leu Ile Gly Asn Leu Gly Leu Val Val Pro Ile Ile Gly Asp  
 50 55 60

ttc tgg ctt cac agc cca atg tac tat ttt ctt ggt gtt tta tca ttc 240  
 Phe Trp Leu His Ser Pro Met Tyr Tyr Phe Leu Gly Val Leu Ser Phe  
 65 70 75 80

ttg gat gtc tgc tat tct aca gtt gtc act cca aaa atg ttg gtc aat 288  
 Leu Asp Val Cys Tyr Ser Thr Val Val Thr Pro Lys Met Leu Val Asn



85	90	95	
ttc ctg gca aaa aat aaa tct att tca ttt ctt gga tgt gca aca cag Phe Leu Ala Lys Asn Lys Ser Ile Ser Phe Leu Gly Cys Ala Thr Gln 100 105 110			336
atg ttt ctt gct tgt act ttt gga acc aca gaa tgc ttt ctc ttg gct Met Phe Leu Ala Cys Thr Phe Gly Thr Thr Glu Cys Phe Leu Leu Ala 115 120 125			384
gca atg gct tat gat cgc tat gta gcc atc tac aac cct ctc ctg tat Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Tyr Asn Pro Leu Leu Tyr 130 135 140			432
tca gtg agc atg tca ccc aga gtc tat gtg cca ctc atc act gct tcc Ser Val Ser Met Ser Pro Arg Val Tyr Val Pro Leu Ile Thr Ala Ser 145 150 155 160			480
tat gtt gct agc att tta cat gct act ata cat aca gtg gct aca ttt Tyr Val Ala Ser Ile Leu His Ala Thr Ile His Thr Val Ala Thr Phe 165 170 175			528
agc ctg tcc ttc tgt gga tcc aat gaa att agg cat gtc ttt tgt aat Ser Leu Ser Phe Cys Gly Ser Asn Glu Ile Arg His Val Phe Cys Asn 180 185 190			576
atg cct cct ctg ctt gct att tct tgt tct gac act cac gta atc cag Met Pro Pro Leu Leu Ala Ile Ser Cys Ser Asp Thr His Val Ile Gln 195 200 205			624
ctt cta ttc ttc tac ttt gtg ggc tct att gag ata gtc act atc ctg Leu Leu Phe Phe Tyr Phe Val Gly Ser Ile Glu Ile Val Thr Ile Leu 210 215 220			672
att gtc ctg atc tcc tat ggt ttt att ctg ttg gcc att ctg aag atg Ile Val Leu Ile Ser Tyr Gly Phe Ile Leu Leu Ala Ile Leu Lys Met 225 230 235 240			720
cag tct gct gaa ggg agg aga aaa gtc ttc tct aca tgt gga gct cac Gln Ser Ala Glu Gly Arg Arg Lys Val Phe Ser Thr Cys Gly Ala His 245 250 255			768
cta act gga gtg aca att tat cat ggg aca atc ctc ttc atg tat gtg Leu Thr Gly Val Thr Ile Tyr His Gly Thr Ile Leu Phe Met Tyr Val 260 265 270			816
aga cca agt tcc agc tac act tcg gac aat gac atg ata gtg tca ata Arg Pro Ser Ser Ser Tyr Thr Ser Asp Asn Asp Met Ile Val Ser Ile 275 280 285			864
ttt tat acc att gtg att ccc atg ctg aat ccc atc atc tac agt ttg Phe Tyr Thr Ile Val Ile Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu 290 295 300			912
cgg aac aaa gat gta aag gag gca atc aaa aga ttg ctt gtg aga aat Arg Asn Lys Asp Val Lys Glu Ala Ile Lys Arg Leu Leu Val Arg Asn 305 310 315 320			960
tgg ttc ata aat aag tta tag Trp Phe Ile Asn Lys Leu 325			981

<210> 522  
 <211> 326  
 <212> PRT  
 <213> Homo Sapiens

<400> 522  
 Met Ser Gly Leu Pro Ser Asp Met Asp Leu Tyr Lys Leu Gln Leu Asn  
 1 5 10 15

Asn Phe Thr Glu Val Thr Met Phe Ile Leu Ile Ser Phe Thr Glu Glu  
 20 25 30

Phe Asp Val Gln Val Phe Leu Phe Leu Leu Phe Leu Ala Ile Tyr Leu  
 35 40 45

Phe Thr Leu Ile Gly Asn Leu Gly Leu Val Val Pro Ile Ile Gly Asp  
 50 55 60

Phe Trp Leu His Ser Pro Met Tyr Tyr Phe Leu Gly Val Leu Ser Phe  
 65 70 75 80

Leu Asp Val Cys Tyr Ser Thr Val Val Thr Pro Lys Met Leu Val Asn  
 85 90 95

Phe Leu Ala Lys Asn Lys Ser Ile Ser Phe Leu Gly Cys Ala Thr Gln  
 100 105 110

Met Phe Leu Ala Cys Thr Phe Gly Thr Thr Glu Cys Phe Leu Leu Ala  
 115 120 125

Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Tyr Asn Pro Leu Leu Tyr  
 130 135 140

Ser Val Ser Met Ser Pro Arg Val Tyr Val Pro Leu Ile Thr Ala Ser  
 145 150 155 160

Tyr Val Ala Ser Ile Leu His Ala Thr Ile His Thr Val Ala Thr Phe  
 165 170 175

Ser Leu Ser Phe Cys Gly Ser Asn Glu Ile Arg His Val Phe Cys Asn  
 180 185 190

Met Pro Pro Leu Leu Ala Ile Ser Cys Ser Asp Thr His Val Ile Gln  
 195 200 205

Leu Leu Phe Phe Tyr Phe Val Gly Ser Ile Glu Ile Val Thr Ile Leu

210                      215                      220  
 Ile Val Leu Ile Ser Tyr Gly Phe Ile Leu Leu Ala Ile Leu Lys Met  
 225                      230                      235                      240  
 Gln Ser Ala Glu Gly Arg Arg Lys Val Phe Ser Thr Cys Gly Ala His  
 245                      250                      255  
 Leu Thr Gly Val Thr Ile Tyr His Gly Thr Ile Leu Phe Met Tyr Val  
 260                      265                      270  
 Arg Pro Ser Ser Ser Tyr Thr Ser Asp Asn Asp Met Ile Val Ser Ile  
 275                      280                      285  
 Phe Tyr Thr Ile Val Ile Pro Met Leu Asn Pro Ile Ile Tyr Ser Leu  
 290                      295                      300  
 Arg Asn Lys Asp Val Lys Glu Ala Ile Lys Arg Leu Leu Val Arg Asn  
 305                      310                      315                      320  
 Trp Phe Ile Asn Lys Leu  
 325

<210> 523  
 <211> 939  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1)..(936)  
 <223>

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 48  
 Met Met Gly Arg Arg Asn Asn Thr Asn Val Ala Asp Phe Ile Leu Met  
 1                      5                      10                      15  
 gga ctg aca ctt tct gaa gag atc cag atg gct ctg ttt atg cta ttt                      96  
 Gly Leu Thr Leu Ser Glu Glu Ile Gln Met Ala Leu Phe Met Leu Phe  
 20                      25                      30  
 ctc ctg ata tac cta att act atg ctg ggg aat gtg ggg atg ata ttg                      144  
 Leu Leu Ile Tyr Leu Ile Thr Met Leu Gly Asn Val Gly Met Ile Leu  
 35                      40                      45  
 ata atc cgc ctg gac ctc cag ctt cac act ccc atg tat ttt ttc ctt                      192  
 Ile Ile Arg Leu Asp Leu Gln Leu His Thr Pro Met Tyr Phe Phe Leu  
 50                      55                      60  
 act cac ctg tca ttt att gac ctc agt tac tca act gtc gtc aca cct                      240  
 Thr His Leu Ser Phe Ile Asp Leu Ser Tyr Ser Thr Val Val Thr Pro

65	70	75	80	
aaa acc tta gcg aac tta ctg act tcc aac tat att tcc ttt acg ggc				288
Lys Thr Leu Ala Asn Leu Leu Thr Ser Asn Tyr Ile Ser Phe Thr Gly				
	85	90	95	
tgc ttt gcc cag atg ttc ttt ttt gcc ttc ttg ggt act gct gaa tgt				336
Cys Phe Ala Gln Met Phe Phe Phe Ala Phe Leu Gly Thr Ala Glu Cys				
	100	105	110	
tac ctt ctc tcc tca atg gcc tat gat cgc tat gca gcg atc tgc agt				384
Tyr Leu Leu Ser Ser Met Ala Tyr Asp Arg Tyr Ala Ala Ile Cys Ser				
	115	120	125	
cct cta cac tac aca gtt att atg tcc aaa agg ctc tgc ctc gct ctc				432
Pro Leu His Tyr Thr Val Ile Met Ser Lys Arg Leu Cys Leu Ala Leu				
	130	135	140	
atc act ggg cct tat gtg att ggc ttt ata gac tcc ttt gtc aac gtg				480
Ile Thr Gly Pro Tyr Val Ile Gly Phe Ile Asp Ser Phe Val Asn Val				
	145	150	155	160
gtt tcc atg agc aga ttg cat ttc tgc gac tca aac gta att cat cac				528
Val Ser Met Ser Arg Leu His Phe Cys Asp Ser Asn Val Ile His His				
	165	170	175	
ttt ttc tgt gac act tcc cca att tta gct ctg tcc tgc act gat aca				576
Phe Phe Cys Asp Thr Ser Pro Ile Leu Ala Leu Ser Cys Thr Asp Thr				
	180	185	190	
tac aac acc gaa atc ctg ata ttc att att gtt ggt tcc acc ctg atg				624
Tyr Asn Thr Glu Ile Leu Ile Phe Ile Ile Val Gly Ser Thr Leu Met				
	195	200	205	
gtg tcc ctt ttc aca ata tct gca tcc tat gtg ttc att ctc ttt acc				672
Val Ser Leu Phe Thr Ile Ser Ala Ser Tyr Val Phe Ile Leu Phe Thr				
	210	215	220	
atc ctg aaa att aat tcc act tca gga aag cag aaa gct ttc tct act				720
Ile Leu Lys Ile Asn Ser Thr Ser Gly Lys Gln Lys Ala Phe Ser Thr				
	225	230	235	240
tgc gtc tct cat ctc ttg gga gtc acc atc ttt tat agc act ctg att				768
Cys Val Ser His Leu Leu Gly Val Thr Ile Phe Tyr Ser Thr Leu Ile				
	245	250	255	
ttt act tat tta aaa cca aga aag tct tat tcc ttg gga aga gat caa				816
Phe Thr Tyr Leu Lys Pro Arg Lys Ser Tyr Ser Leu Gly Arg Asp Gln				
	260	265	270	
gtg gct tct gtt ttt tat act att gtg att ccc atg ctg aat cca ctc				864
Val Ala Ser Val Phe Tyr Thr Ile Val Ile Pro Met Leu Asn Pro Leu				
	275	280	285	
att tat agt ctt aga aac aaa gag gtg aaa aat gct gtc atc aga gtc				912
Ile Tyr Ser Leu Arg Asn Lys Glu Val Lys Asn Ala Val Ile Arg Val				
	290	295	300	
atg cag aga aga cag gac tcc agg taa				939
Met Gln Arg Arg Gln Asp Ser Arg				
	305	310		

&lt;210&gt; 524

&lt;211&gt; 312

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 524

Met Met Gly Arg Arg Asn Asn Thr Asn Val Ala Asp Phe Ile Leu Met  
 1 5 10 15

Gly Leu Thr Leu Ser Glu Glu Ile Gln Met Ala Leu Phe Met Leu Phe  
 20 25 30

Leu Leu Ile Tyr Leu Ile Thr Met Leu Gly Asn Val Gly Met Ile Leu  
 35 40 45

Ile Ile Arg Leu Asp Leu Gln Leu His Thr Pro Met Tyr Phe Phe Leu  
 50 55 60

Thr His Leu Ser Phe Ile Asp Leu Ser Tyr Ser Thr Val Val Thr Pro  
 65 70 75 80

Lys Thr Leu Ala Asn Leu Leu Thr Ser Asn Tyr Ile Ser Phe Thr Gly  
 85 90 95

Cys Phe Ala Gln Met Phe Phe Phe Ala Phe Leu Gly Thr Ala Glu Cys  
 100 105 110

Tyr Leu Leu Ser Ser Met Ala Tyr Asp Arg Tyr Ala Ala Ile Cys Ser  
 115 120 125

Pro Leu His Tyr Thr Val Ile Met Ser Lys Arg Leu Cys Leu Ala Leu  
 130 135 140

Ile Thr Gly Pro Tyr Val Ile Gly Phe Ile Asp Ser Phe Val Asn Val  
 145 150 155 160

Val Ser Met Ser Arg Leu His Phe Cys Asp Ser Asn Val Ile His His  
 165 170 175

Phe Phe Cys Asp Thr Ser Pro Ile Leu Ala Leu Ser Cys Thr Asp Thr  
 180 185 190

Tyr Asn Thr Glu Ile Leu Ile Phe Ile Ile Val Gly Ser Thr Leu Met  
 195 200 205

Val Ser Leu Phe Thr Ile Ser Ala Ser Tyr Val Phe Ile Leu Phe Thr

[illegible]

	85	90	95	
tgc ttt gcc cag atg ttc tgt ttt gtc ttc ttg ggt act gct gaa tgt				336
Cys Phe Ala Gln Met Phe Cys Phe Val Phe Leu Gly Thr Ala Glu Cys				
	100	105	110	
tat ctt ctc tcc tca atg gcc tat gat cgc tat gca gcg atc tgc agt				384
Tyr Leu Leu Ser Ser Met Ala Tyr Asp Arg Tyr Ala Ala Ile Cys Ser				
	115	120	125	
cct cta cac tac aca gtt att atg tcc aaa agg ctc tgc ctc gct ctc				432
Pro Leu His Tyr Thr Val Ile Met Ser Lys Arg Leu Cys Leu Ala Leu				
	130	135	140	
atc act ggg cct tat gtg att ggc ttt atg gac tcc ttt gtc aat gtg				480
Ile Thr Gly Pro Tyr Val Ile Gly Phe Met Asp Ser Phe Val Asn Val				
	145	150	155	160
gtt tcc atg agc aga ttg cat ttc tgt gac tca aac ata att cat cac				528
Val Ser Met Ser Arg Leu His Phe Cys Asp Ser Asn Ile Ile His His				
	165	170	175	
ttt ttc tgt gac act tcc cca att tta gct ctg tcc tgc act gac aca				576
Phe Phe Cys Asp Thr Ser Pro Ile Leu Ala Leu Ser Cys Thr Asp Thr				
	180	185	190	
gac aac act gaa atg ctg ata ttc att atc gct ggt tcc acc ctg atg				624
Asp Asn Thr Glu Met Leu Ile Phe Ile Ile Ala Gly Ser Thr Leu Met				
	195	200	205	
gtg tcc ctt atc aca ata tct gca tcc tat gtg tcc att ctc tct acc				672
Val Ser Leu Ile Thr Ile Ser Ala Ser Tyr Val Ser Ile Leu Ser Thr				
	210	215	220	
atc ctg aaa att aat tcc act tca gga aag cag aaa gct ttc tct act				720
Ile Leu Lys Ile Asn Ser Thr Ser Gly Lys Gln Lys Ala Phe Ser Thr				
	225	230	235	240
tgc gtc tct cat ctc ttg gga gtc acc atc ttc tat gga act atg att				768
Cys Val Ser His Leu Leu Gly Val Thr Ile Phe Tyr Gly Thr Met Ile				
	245	250	255	
ttt act tac tta aag cca aga aag tct tat tcc ttg gga aga gat caa				816
Phe Thr Tyr Leu Lys Pro Arg Lys Ser Tyr Ser Leu Gly Arg Asp Gln				
	260	265	270	
gtg gct cct gtg ttt tat act att gtg att ccc atg ctg aat cca ctc				864
Val Ala Pro Val Phe Tyr Thr Ile Val Ile Pro Met Leu Asn Pro Leu				
	275	280	285	
att tat agt ctt aga aac aga gaa gtg aaa aat gct ctc att aga gtc				912
Ile Tyr Ser Leu Arg Asn Arg Glu Val Lys Asn Ala Leu Ile Arg Val				
	290	295	300	
atg cag aga aga cag gac tcc agg tag				939
Met Gln Arg Arg Gln Asp Ser Arg				
	305	310		

&lt;210&gt; 526

&lt;211&gt; 312

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&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 526

Met Met Gly Arg Arg Asn Asp Thr Asn Val Ala Asp Phe Ile Leu Thr  
 1 5 10 15

Gly Leu Ser Asp Ser Glu Glu Val Gln Met Ala Leu Phe Met Leu Phe  
 20 25 30

Leu Leu Ile Tyr Leu Ile Thr Met Leu Gly Asn Val Gly Met Leu Leu  
 35 40 45

Ile Ile Arg Leu Asp Leu Gln Leu His Thr Pro Met Tyr Phe Phe Leu  
 50 55 60

Thr His Leu Ser Phe Ile Asp Leu Ser Tyr Ser Thr Val Val Thr Pro  
 65 70 75 80

Lys Thr Leu Ala Asn Leu Leu Thr Ser Asn Tyr Ile Ser Phe Thr Gly  
 85 90 95

Cys Phe Ala Gln Met Phe Cys Phe Val Phe Leu Gly Thr Ala Glu Cys  
 100 105 110

Tyr Leu Leu Ser Ser Met Ala Tyr Asp Arg Tyr Ala Ala Ile Cys Ser  
 115 120 125

Pro Leu His Tyr Thr Val Ile Met Ser Lys Arg Leu Cys Leu Ala Leu  
 130 135 140

Ile Thr Gly Pro Tyr Val Ile Gly Phe Met Asp Ser Phe Val Asn Val  
 145 150 155 160

Val Ser Met Ser Arg Leu His Phe Cys Asp Ser Asn Ile Ile His His  
 165 170 175

Phe Phe Cys Asp Thr Ser Pro Ile Leu Ala Leu Ser Cys Thr Asp Thr  
 180 185 190

Asp Asn Thr Glu Met Leu Ile Phe Ile Ile Ala Gly Ser Thr Leu Met  
 195 200 205

Val Ser Leu Ile Thr Ile Ser Ala Ser Tyr Val Ser Ile Leu Ser Thr  
 210 215 220

Ile Leu Lys Ile Asn Ser Thr Ser Gly Lys Gln Lys Ala Phe Ser Thr



225

230

235

240

Cys Val Ser His Leu Leu Gly Val Thr Ile Phe Tyr Gly Thr Met Ile  
 245 250 255

Phe Thr Tyr Leu Lys Pro Arg Lys Ser Tyr Ser Leu Gly Arg Asp Gln  
 260 265 270

Val Ala Pro Val Phe Tyr Thr Ile Val Ile Pro Met Leu Asn Pro Leu  
 275 280 285

Ile Tyr Ser Leu Arg Asn Arg Glu Val Lys Asn Ala Leu Ile Arg Val  
 290 295 300

Met Gln Arg Arg Gln Asp Ser Arg  
 305 310

<210> 527  
 <211> 924  
 <212> DNA  
 <213> Homo Sapiens

<220>  
 <221> CDS  
 <222> (1) .. (921)  
 <223>

<400> 527atg ggc caa cac aat cta aca gtg cta act gaa ttc att ctg atg gaa  
 48

Met Gly Gln His Asn Leu Thr Val Leu Thr Glu Phe Ile Leu Met Glu  
 1 5 10 15

ctc aca agg cgg cct gag ctg cag att ccc ctt ttt gga gtc ttc ctc 96  
 Leu Thr Arg Arg Pro Glu Leu Gln Ile Pro Leu Phe Gly Val Phe Leu  
 20 25 30

gtc atc tac cta atc aca gtg gtg ggc aac cta act atg atc att ttg 144  
 Val Ile Tyr Leu Ile Thr Val Val Gly Asn Leu Thr Met Ile Ile Leu  
 35 40 45

acc aaa ctg gac tcc cac tta cat aca cct atg tac ttt tct atc aga 192  
 Thr Lys Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Ser Ile Arg  
 50 55 60

cat ttg gct ttt gtt gat ctt ggt aat tct act gtc att tgt ccc aag 240  
 His Leu Ala Phe Val Asp Leu Gly Asn Ser Thr Val Ile Cys Pro Lys  
 65 70 75 80

gtg ctg gca aat ttt gtt gtg gat cga aat act att tcc tat tat gca 288  
 Val Leu Ala Asn Phe Val Val Asp Arg Asn Thr Ile Ser Tyr Tyr Ala  
 85 90 95

tgt gct gca cag ctg gca ttc ttc ctt atg ttc att atc agt gaa ttt 336  
 Cys Ala Ala Gln Leu Ala Phe Phe Leu Met Phe Ile Ile Ser Glu Phe

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100	105	110	
ttc atc ctg tca gcc atg gcc tat gac cgc tat gtg gcc att tgt aac			384
Phe Ile Leu Ser Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Asn			
115	120	125	
cct ctg ctc tat tat gtt att atg tct cag cga ctg tgt cat gta ctg			432
Pro Leu Leu Tyr Tyr Val Ile Met Ser Gln Arg Leu Cys His Val Leu			
130	135	140	
gtg ggc att caa tat ctc tac agc aca ttt cag gct ctg atg ttc act			480
Val Gly Ile Gln Tyr Leu Tyr Ser Thr Phe Gln Ala Leu Met Phe Thr			
145	150	155	160
att aag att ttt aca ttg acc ttc tgt ggc tct aat gtc atc agt cat			528
Ile Lys Ile Phe Thr Leu Thr Phe Cys Gly Ser Asn Val Ile Ser His			
165	170	175	
ttt tac tgt gat gat gtt cct ttg cta cct atg ctt tgc tca aat gca			576
Phe Tyr Cys Asp Asp Val Pro Leu Leu Pro Met Leu Cys Ser Asn Ala			
180	185	190	
cag gaa ata gaa ttg ttg agc ata cta ttt tct gta ttt aat ttg atc			624
Gln Glu Ile Glu Leu Leu Ser Ile Leu Phe Ser Val Phe Asn Leu Ile			
195	200	205	
tcc tcc ttt ctg ata gtc tta gtg tcc tac atg ttg att ttg tta gct			672
Ser Ser Phe Leu Ile Val Leu Val Ser Tyr Met Leu Ile Leu Leu Ala			
210	215	220	
ata tgt caa atg cat tct gca gag ggc agg aaa aag gct ttc tcc aca			720
Ile Cys Gln Met His Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr			
225	230	235	240
tgt ggt tcc cat ttg aca gtg gtg gtt gtg ttc tat ggg tct cta ctc			768
Cys Gly Ser His Leu Thr Val Val Val Val Phe Tyr Gly Ser Leu Leu			
245	250	255	
ttc atg tac atg cag ccc aat tcc act cac ttc ttt gat act gat aaa			816
Phe Met Tyr Met Gln Pro Asn Ser Thr His Phe Phe Asp Thr Asp Lys			
260	265	270	
atg gct tct gtg ttt tac act tta gta atc ccc atg ctt aac cct ttg			864
Met Ala Ser Val Phe Tyr Thr Leu Val Ile Pro Met Leu Asn Pro Leu			
275	280	285	
att tac agc tta aga aac gaa gag gtg aaa aat gcc ttc tat aag ctc			912
Ile Tyr Ser Leu Arg Asn Glu Glu Val Lys Asn Ala Phe Tyr Lys Leu			
290	295	300	
ttt gag aat tga			924
Phe Glu Asn			
305			

<210> 528  
 <211> 307  
 <212> PRT  
 <213> Homo Sapiens

<400> 528

Met Gly Gln His Asn Leu Thr Val Leu Thr Glu Phe Ile Leu Met Glu  
 1 5 10 15  
 Leu Thr Arg Arg Pro Glu Leu Gln Ile Pro Leu Phe Gly Val Phe Leu  
 20 25 30  
 Val Ile Tyr Leu Ile Thr Val Val Gly Asn Leu Thr Met Ile Ile Leu  
 35 40 45  
 Thr Lys Leu Asp Ser His Leu His Thr Pro Met Tyr Phe Ser Ile Arg  
 50 55 60  
 His Leu Ala Phe Val Asp Leu Gly Asn Ser Thr Val Ile Cys Pro Lys  
 65 70 75 80  
 Val Leu Ala Asn Phe Val Val Asp Arg Asn Thr Ile Ser Tyr Tyr Ala  
 85 90 95  
 Cys Ala Ala Gln Leu Ala Phe Phe Leu Met Phe Ile Ile Ser Glu Phe  
 100 105 110  
 Phe Ile Leu Ser Ala Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys Asn  
 115 120 125  
 Pro Leu Leu Tyr Tyr Val Ile Met Ser Gln Arg Leu Cys His Val Leu  
 130 135 140  
 Val Gly Ile Gln Tyr Leu Tyr Ser Thr Phe Gln Ala Leu Met Phe Thr  
 145 150 155 160  
 Ile Lys Ile Phe Thr Leu Thr Phe Cys Gly Ser Asn Val Ile Ser His  
 165 170 175  
 Phe Tyr Cys Asp Asp Val Pro Leu Leu Pro Met Leu Cys Ser Asn Ala  
 180 185 190  
 Gln Glu Ile Glu Leu Leu Ser Ile Leu Phe Ser Val Phe Asn Leu Ile  
 195 200 205  
 Ser Ser Phe Leu Ile Val Leu Val Ser Tyr Met Leu Ile Leu Leu Ala  
 210 215 220  
 Ile Cys Gln Met His Ser Ala Glu Gly Arg Lys Lys Ala Phe Ser Thr  
 225 230 235 240  
 Cys Gly Ser His Leu Thr Val Val Val Val Phe Tyr Gly Ser Leu Leu

790

115	120	125	
ccc ttg ctt tac act gta gcc atg tct gat aga aag tgt gtg gag ctt Pro Leu Leu Tyr Thr Val Ala Met Ser Asp Arg Lys Cys Val Glu Leu 130 135 140			432
gtc aca gga tca tgg ata ggt gga ata gtt aac aca tta atc cac aca Val Thr Gly Ser Trp Ile Gly Gly Ile Val Asn Thr Leu Ile His Thr 145 150 155 160			480
atc agc ttg agg aga ctg tcc ttt tgt agg cta aat gct gtc agc cac Ile Ser Leu Arg Arg Leu Ser Phe Cys Arg Leu Asn Ala Val Ser His 165 170 175			528
ttc ttc tgt gac att cct tca ctg cta aag ctg tca tgt tct gac acc Phe Phe Cys Asp Ile Pro Ser Leu Leu Lys Leu Ser Cys Ser Asp Thr 180 185 190			576
tcc atg aat gag ttg ttg ctg tta acc ttc tcc gga gtc att gcc atg Ser Met Asn Glu Leu Leu Leu Leu Thr Phe Ser Gly Val Ile Ala Met 195 200 205			624
gcc acc ttc ttg act gtg atc att tcc tac atc ttc att gct ttt gct Ala Thr Phe Leu Thr Val Ile Ile Ser Tyr Ile Phe Ile Ala Phe Ala 210 215 220			672
agc cta agg atc cac tca gca tca ggc aga cag caa gcc ttc tcc acc Ser Leu Arg Ile His Ser Ala Ser Gly Arg Gln Gln Ala Phe Ser Thr 225 230 235 240			720
tgt gcc tct cac ctg act gct gtg acc ata ttc tat ggt acc tta atc Cys Ala Ser His Leu Thr Ala Val Thr Ile Phe Tyr Gly Thr Leu Ile 245 250 255			768
ttt agc tac att cag cca agc tcc cag tat ttt gtg gaa caa gag aaa Phe Ser Tyr Ile Gln Pro Ser Ser Gln Tyr Phe Val Glu Gln Glu Lys 260 265 270			816
gtg gtt tct atg ttc tat acg cta ggg att ccc atg tta aac ctg ttg Val Val Ser Met Phe Tyr Thr Leu Gly Ile Pro Met Leu Asn Leu Leu 275 280 285			864
ata cac agt ttg aga aac aag gac gta aag gag gca gtg aaa agg gcc Ile His Ser Leu Arg Asn Lys Asp Val Lys Glu Ala Val Lys Arg Ala 290 295 300			912
ata gaa atg aaa cat ttc ctc tgt taa Ile Glu Met Lys His Phe Leu Cys 305 310			939
<210> 530			
<211> 312			
<212> PRT			
<213> Homo Sapiens			
<400> 530			
Met Ala Asp Asp Asn Phe Thr Val Val Thr Glu Phe Ile Leu Leu Gly 1 5 10 15			

Leu Thr Asp His Ala Glu Leu Lys Ala Val Leu Phe Val Val Phe Leu  
 20 25 30

Val Ile Tyr Ala Ile Thr Leu Leu Arg Asn Leu Gly Met Ile Leu Leu  
 35 40 45

Ile Gln Ile Thr Ser Lys Leu His Thr Pro Met Tyr Phe Leu Leu Ser  
 50 55 60

Cys Leu Ser Phe Val Asp Ala Cys Tyr Ser Ser Ala Ile Ala Pro Lys  
 65 70 75 80

Met Leu Val Asn Leu Leu Val Val Lys Ala Thr Ile Ser Phe Ser Ala  
 85 90 95

Cys Met Val Gln His Leu Cys Phe Gly Val Phe Ile Thr Thr Glu Gly  
 100 105 110

Phe Leu Leu Ser Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Val Ser  
 115 120 125

Pro Leu Leu Tyr Thr Val Ala Met Ser Asp Arg Lys Cys Val Glu Leu  
 130 135 140

Val Thr Gly Ser Trp Ile Gly Gly Ile Val Asn Thr Leu Ile His Thr  
 145 150 155 160

Ile Ser Leu Arg Arg Leu Ser Phe Cys Arg Leu Asn Ala Val Ser His  
 165 170 175

Phe Phe Cys Asp Ile Pro Ser Leu Leu Lys Leu Ser Cys Ser Asp Thr  
 180 185 190

Ser Met Asn Glu Leu Leu Leu Leu Thr Phe Ser Gly Val Ile Ala Met  
 195 200 205

Ala Thr Phe Leu Thr Val Ile Ile Ser Tyr Ile Phe Ile Ala Phe Ala  
 210 215 220

Ser Leu Arg Ile His Ser Ala Ser Gly Arg Gln Gln Ala Phe Ser Thr  
 225 230 235 240

Cys Ala Ser His Leu Thr Ala Val Thr Ile Phe Tyr Gly Thr Leu Ile  
 245 250 255

Phe Ser Tyr Ile Gln Pro Ser Ser Gln Tyr Phe Val Glu Gln Glu Lys

260

265

270

Val Val Ser Met Phe Tyr Thr Leu Gly Ile Pro Met Leu Asn Leu Leu  
 275 280 285

Ile His Ser Leu Arg Asn Lys Asp Val Lys Glu Ala Val Lys Arg Ala  
 290 295 300

Ile Glu Met Lys His Phe Leu Cys  
 305 310

&lt;210&gt; 531

&lt;211&gt; 948

&lt;212&gt; DNA

&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) .. (945)

&lt;223&gt;

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 48

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 1 5 10 15

ctg aca gac gac cca gtg cta gag aag atc ctg ttt ggg gtg ttc ctg 96  
 Leu Thr Asp Asp Pro Val Leu Glu Lys Ile Leu Phe Gly Val Phe Leu  
 20 25 30

gcg atc tac cta atc aca ctg gca ggc aac ctg tgc atg atc ctg ctg 144  
 Ala Ile Tyr Leu Ile Thr Leu Ala Gly Asn Leu Cys Met Ile Leu Leu  
 35 40 45

atc agg acc aat tcc caa ctg caa aca ccc atg tat ttc ttc ctt ggt 192  
 Ile Arg Thr Asn Ser Gln Leu Gln Thr Pro Met Tyr Phe Phe Leu Gly  
 50 55 60

cac ctc tcc ttt gta gac att tgc tat tct tcc aat gtt act cca aat 240  
 His Leu Ser Phe Val Asp Ile Cys Tyr Ser Ser Asn Val Thr Pro Asn  
 65 70 75 80

atg ctg cac aat ttc ctc tca gaa cag aag acc atc tcc tac gct gga 288  
 Met Leu His Asn Phe Leu Ser Glu Gln Lys Thr Ile Ser Tyr Ala Gly  
 85 90 95

tgc ttc aca cag tgt ctt ctc ttc atc gcc cta gtg atc act gag ttt 336  
 Cys Phe Thr Gln Cys Leu Leu Phe Ile Ala Leu Val Ile Thr Glu Phe  
 100 105 110

tac ttc ctt gct tca atg gca ttg gat cgc tat gta gcc att tgc agc 384  
 Tyr Phe Leu Ala Ser Met Ala Leu Asp Arg Tyr Val Ala Ile Cys Ser  
 115 120 125

cct tta cat tac agt tcc agg atg tcc aag aac att tgc atc tct ctg 432  
 Pro Leu His Tyr Ser Ser Arg Met Ser Lys Asn Ile Cys Ile Ser Leu

130	135	140	
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Val Thr Val Pro Tyr Met Tyr Gly Phe Leu Asn Gly Leu Ser Gln Thr			
145	150	155	160
ctg ctg acc ttt cac tta tcc ttc tgt ggc tcc ctt gaa atc aat cat			528
Leu Leu Thr Phe His Leu Ser Phe Cys Gly Ser Leu Glu Ile Asn His			
	165	170	175
ttc tac tgc gct gat cct cct ctt atc atg ctg gcc tgc tct gac acc			576
Phe Tyr Cys Ala Asp Pro Pro Leu Ile Met Leu Ala Cys Ser Asp Thr			
	180	185	190
cgt gtc aaa aag atg gca atg ttt gta gtt gca ggc ttt act ctc tca			624
Arg Val Lys Lys Met Ala Met Phe Val Val Ala Gly Phe Thr Leu Ser			
	195	200	205
agc tct ctc ttc atc att ctt ctg tcc tat ctt ttc att ttt gca gcg			672
Ser Ser Leu Phe Ile Ile Leu Leu Ser Tyr Leu Phe Ile Phe Ala Ala			
	210	215	220
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Ile Phe Arg Ile Arg Ser Ala Glu Gly Arg His Lys Ala Phe Ser Thr			
	225	230	235
tgt gct tcc cac ctg aca ata gtc act ttg ttt tat gga acc ctc ttc			768
Cys Ala Ser His Leu Thr Ile Val Thr Leu Phe Tyr Gly Thr Leu Phe			
	245	250	255
tgc atg tac gta agg cct cca tca gag aag tct gta gag gag tcc aaa			816
Cys Met Tyr Val Arg Pro Pro Ser Glu Lys Ser Val Glu Glu Ser Lys			
	260	265	270
ata att gca gtc ttt tat act ttt ttg agc cca atg ctg aac cca ttg			864
Ile Ile Ala Val Phe Tyr Thr Phe Leu Ser Pro Met Leu Asn Pro Leu			
	275	280	285
atc tat agc cta cgg aac aga gat gta atc ctt gcc ata caa caa atg			912
Ile Tyr Ser Leu Arg Asn Arg Asp Val Ile Leu Ala Ile Gln Gln Met			
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Leu Thr Asp Asp Pro Val Leu Glu Lys Ile Leu Phe Gly Val Phe Leu			
	20	25	30



Ala Ile Tyr Leu Ile Thr Leu Ala Gly Asn Leu Cys Met Ile Leu Leu  
 35 40 45

Ile Arg Thr Asn Ser Gln Leu Gln Thr Pro Met Tyr Phe Phe Leu Gly  
 50 55 60

His Leu Ser Phe Val Asp Ile Cys Tyr Ser Ser Asn Val Thr Pro Asn  
 65 70 75 80

Met Leu His Asn Phe Leu Ser Glu Gln Lys Thr Ile Ser Tyr Ala Gly  
 85 90 95

Cys Phe Thr Gln Cys Leu Leu Phe Ile Ala Leu Val Ile Thr Glu Phe  
 100 105 110

Tyr Phe Leu Ala Ser Met Ala Leu Asp Arg Tyr Val Ala Ile Cys Ser  
 115 120 125

Pro Leu His Tyr Ser Ser Arg Met Ser Lys Asn Ile Cys Ile Ser Leu  
 130 135 140

Val Thr Val Pro Tyr Met Tyr Gly Phe Leu Asn Gly Leu Ser Gln Thr  
 145 150 155 160

Leu Leu Thr Phe His Leu Ser Phe Cys Gly Ser Leu Glu Ile Asn His  
 165 170 175

Phe Tyr Cys Ala Asp Pro Pro Leu Ile Met Leu Ala Cys Ser Asp Thr  
 180 185 190

Arg Val Lys Lys Met Ala Met Phe Val Val Ala Gly Phe Thr Leu Ser  
 195 200 205

Ser Ser Leu Phe Ile Ile Leu Leu Ser Tyr Leu Phe Ile Phe Ala Ala  
 210 215 220

Ile Phe Arg Ile Arg Ser Ala Glu Gly Arg His Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ala Ser His Leu Thr Ile Val Thr Leu Phe Tyr Gly Thr Leu Phe  
 245 250 255

Cys Met Tyr Val Arg Pro Pro Ser Glu Lys Ser Val Glu Glu Ser Lys  
 260 265 270

Ile Ile Ala Val Phe Tyr Thr Phe Leu Ser Pro Met Leu Asn Pro Leu

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280

285

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 20 25 30  
 ggc atc ttc tca ctg gca ttg atg gaa aat att tcc atg gtt ctc ctc 144  
 Gly Ile Phe Ser Leu Ala Leu Met Glu Asn Ile Ser Met Val Leu Leu  
 35 40 45  
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 50 55 60  
 caa ctg tcc ctt atg gac ctc atg ctc atc tgc acc act cta ccc aag 240  
 Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Leu Pro Lys  
 65 70 75 80  
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 Met Ile Phe Ser Tyr Leu Ser Gly Lys Lys Ser Ile Ser Leu Ala Gly  
 85 90 95  
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 Cys Gly Thr Gln Ile Phe Phe Tyr Val Ser Leu Leu Gly Ala Glu Cys  
 100 105 110  
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 Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
 115 120 125  
 cct ctt cag tac acc atc ctc atg aat ccg aaa ctc tgt gtc ttc atg 432  
 Pro Leu Gln Tyr Thr Ile Leu Met Asn Pro Lys Leu Cys Val Phe Met  
 130 135 140  
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145 150 155 160

gca gct gtc ctg tca ttt tct tac tgc agc tct ctg gaa att cat cac 528  
Ala Ala Val Leu Ser Phe Ser Tyr Cys Ser Ser Leu Glu Ile His His  
165 170 175

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Phe Phe Cys Asp Val Ala Ala Leu Leu Pro Leu Ser Cys Thr Glu Thr  
180 185 190

tct gca ttt gaa aga cta ctt gtc att tgt tgt gtg gta atg cta atc 624  
Ser Ala Phe Glu Arg Leu Leu Val Ile Cys Cys Val Val Met Leu Ile  
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210 215 220

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Val Ile His Met Gly Ser Gly Glu Ser Arg Arg Lys Ala Phe Thr Thr  
225 230 235 240

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Cys Ser Ser His Leu Ser Val Val Gly Leu Tyr Tyr Gly Ala Ala Met  
245 250 255

ttc atg tac atg aga cca gct tct aaa cat acg cca gac cag gac aag 816  
Phe Met Tyr Met Arg Pro Ala Ser Lys His Thr Pro Asp Gln Asp Lys  
260 265 270

atg gtg tgc gcc ttc tac act att ctc acc cct atg ctg aac cct ctc 864  
Met Val Ser Ala Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu  
275 280 285

att tat agc ctc cgc aac aaa gaa gtg ttc agg gca cta cag aag gta 912  
Ile Tyr Ser Leu Arg Asn Lys Glu Val Phe Arg Ala Leu Gln Lys Val  
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20 25 30

Gly Ile Phe Ser Leu Ala Leu Met Glu Asn Ile Ser Met Val Leu Leu  
35 40 45

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Ile Tyr Ile Glu Lys Gln Leu His Thr Pro Met Tyr Phe Leu Leu Ser  
 50 55 60

Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Leu Pro Lys  
 65 70 75 80

Met Ile Phe Ser Tyr Leu Ser Gly Lys Lys Ser Ile Ser Leu Ala Gly  
 85 90 95

Cys Gly Thr Gln Ile Phe Phe Tyr Val Ser Leu Leu Gly Ala Glu Cys  
 100 105 110

Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Val Ala Ile Cys His  
 115 120 125

Pro Leu Gln Tyr Thr Ile Leu Met Asn Pro Lys Leu Cys Val Phe Met  
 130 135 140

Thr Val Ala Ser Trp Thr Leu Gly Ser Leu Asp Gly Ile Ile Val Leu  
 145 150 155 160

Ala Ala Val Leu Ser Phe Ser Tyr Cys Ser Ser Leu Glu Ile His His  
 165 170 175

Phe Phe Cys Asp Val Ala Ala Leu Leu Pro Leu Ser Cys Thr Glu Thr  
 180 185 190

Ser Ala Phe Glu Arg Leu Leu Val Ile Cys Cys Val Val Met Leu Ile  
 195 200 205

Phe Pro Val Ser Val Ile Ile Leu Ser Tyr Ser His Val Leu Arg Ala  
 210 215 220

Val Ile His Met Gly Ser Gly Glu Ser Arg Arg Lys Ala Phe Thr Thr  
 225 230 235 240

Cys Ser Ser His Leu Ser Val Val Gly Leu Tyr Tyr Gly Ala Ala Met  
 245 250 255

Phe Met Tyr Met Arg Pro Ala Ser Lys His Thr Pro Asp Gln Asp Lys  
 260 265 270

Met Val Ser Ala Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu  
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Ile Tyr Ser Leu Arg Asn Lys Glu Val Phe Arg Ala Leu Gln Lys Val

290

295

300

Leu Lys Lys Arg Lys Leu Ile  
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atc ttc aat cac agc ccc acc cac acc ttc ctc ttc ttt ctg gtc ctg 96  
Ile Phe Asn His Ser Pro Thr His Thr Phe Leu Phe Phe Leu Val Leu  
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gcc atc ttt tca gtg gcc ttc atg gga aac tct gtc atg gtt ctc ctc 144  
Ala Ile Phe Ser Val Ala Phe Met Gly Asn Ser Val Met Val Leu Leu  
35 40 45

atc tac ctg gac acc cag ctc cac acc ccc atg tac ctc ctc ctc agc 192  
Ile Tyr Leu Asp Thr Gln Leu His Thr Pro Met Tyr Leu Leu Leu Ser  
50 55 60

caa ctg tcc ctc atg gac ctc atg ctc atc tgc acc acc gta ccc aag 240  
Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Val Pro Lys  
65 70 75 80

atg gcc ttc aac tac ctg tct ggc agc aag tcc att tct atg gct ggt 288  
Met Ala Phe Asn Tyr Leu Ser Gly Ser Lys Ser Ile Ser Met Ala Gly  
85 90 95

tgt gcc aca caa att ttc ttc tat aca tca ctg ctt ggc tct gag tgc 336  
Cys Ala Thr Gln Ile Phe Phe Tyr Thr Ser Leu Leu Gly Ser Glu Cys  
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Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Thr Ala Ile Cys His  
115 120 125

cct cta aga tac acc aat ctc atg agc cct aaa att tgt gga ctt atg 432  
Pro Leu Arg Tyr Thr Asn Leu Met Ser Pro Lys Ile Cys Gly Leu Met  
130 135 140

act gcc ttt tcc tgg atc ctg ggc tct acg gat gga att att gat gtt 480  
Thr Ala Phe Ser Trp Ile Leu Gly Ser Thr Asp Gly Ile Ile Asp Val  
145 150 155 160

gta gca aca ttt tcc ttc tcc tac tgt ggg tct cgg gaa ata gcc cac 528  
Val Ala Thr Phe Ser Phe Ser Tyr Cys Gly Ser Arg Glu Ile Ala His

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tca ata ttt gaa aag att ctt ttc atc tgc tgt ata gta atg att gtt			624
Ser Ile Phe Glu Lys Ile Leu Phe Ile Cys Cys Ile Val Met Ile Val			
195	200	205	
ttc cct gtt gca atc atc att gct tcc tat gct cga gtt atc ctg gct			672
Phe Pro Val Ala Ile Ile Ile Ala Ser Tyr Ala Arg Val Ile Leu Ala			
210	215	220	
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Val Ile His Met Gly Ser Gly Glu Gly Arg Arg Lys Ala Phe Thr Thr			
225	230	235	
tgt tcc tct cac ctc ttg gtg gtg gga atg tac tat gga gca gct ttg			768
Cys Ser Ser His Leu Leu Val Val Gly Met Tyr Tyr Gly Ala Ala Leu			
245	250	255	
ttc atg tac ata cgg ccc aca tct gat cgc tcc cca aca cag gac aag			816
Phe Met Tyr Ile Arg Pro Thr Ser Asp Arg Ser Pro Thr Gln Asp Lys			
260	265	270	
atg gtg tct gta ttc tac acc atc ctc act ccc atg ttg aat ccc ctc			864
Met Val Ser Val Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu			
275	280	285	
atc tac agc ctc cgc aac aag gag gtg acc aga gca ttc atg aag atc			912
Ile Tyr Ser Leu Arg Asn Lys Glu Val Thr Arg Ala Phe Met Lys Ile			
290	295	300	
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20	25		
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35	40		
Ile Tyr Leu Asp Thr Gln Leu His Thr Pro Met Tyr Leu Leu Leu Ser			60
50	55		

Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Val Pro Lys  
65 70 75 80

Met Ala Phe Asn Tyr Leu Ser Gly Ser Lys Ser Ile Ser Met Ala Gly  
85 90 95

Cys Ala Thr Gln Ile Phe Phe Tyr Thr Ser Leu Leu Gly Ser Glu Cys  
100 105 110

Phe Leu Leu Ala Val Met Ala Tyr Asp Arg Tyr Thr Ala Ile Cys His  
115 120 125

Pro Leu Arg Tyr Thr Asn Leu Met Ser Pro Lys Ile Cys Gly Leu Met  
130 135 140

Thr Ala Phe Ser Trp Ile Leu Gly Ser Thr Asp Gly Ile Ile Asp Val  
145 150 155 160

Val Ala Thr Phe Ser Phe Ser Tyr Cys Gly Ser Arg Glu Ile Ala His  
165 170 175

Phe Phe Cys Asp Phe Pro Ser Leu Leu Ile Leu Ser Cys Ser Asp Thr  
180 185 190

Ser Ile Phe Glu Lys Ile Leu Phe Ile Cys Cys Ile Val Met Ile Val  
195 200 205

Phe Pro Val Ala Ile Ile Ile Ala Ser Tyr Ala Arg Val Ile Leu Ala  
210 215 220

Val Ile His Met Gly Ser Gly Glu Gly Arg Arg Lys Ala Phe Thr Thr  
225 230 235 240

Cys Ser Ser His Leu Leu Val Val Gly Met Tyr Tyr Gly Ala Ala Leu  
245 250 255

Phe Met Tyr Ile Arg Pro Thr Ser Asp Arg Ser Pro Thr Gln Asp Lys  
260 265 270

Met Val Ser Val Phe Tyr Thr Ile Leu Thr Pro Met Leu Asn Pro Leu  
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305

310

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 Asn His Thr Arg Ala His Gln Val Leu Phe Met Met Leu Leu Ala Thr  
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 Val Leu Thr Ser Leu Phe Ser Asn Ala Leu Met Ile Leu Leu Ile His  
 35 40 45  
 tgg gac cac cgg ctc cac agg ccc atg tac ttc ctc ctg agc caa ctt 192  
 Trp Asp His Arg Leu His Arg Pro Met Tyr Phe Leu Leu Ser Gln Leu  
 50 55 60  
 tcc ctc atg gac atg atg ctg gtt tcc acc act gtg ccc aaa atg gcg 240  
 Ser Leu Met Asp Met Met Leu Val Ser Thr Thr Val Pro Lys Met Ala  
 65 70 75 80  
 gct gac tac ttg acc gga aat aag gcc atc tcc cgc gct ggc tgt ggt 288  
 Ala Asp Tyr Leu Thr Gly Asn Lys Ala Ile Ser Arg Ala Gly Cys Gly  
 85 90 95  
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 Val Gln Ile Phe Phe Leu Pro Thr Leu Gly Gly Gly Glu Cys Phe Leu  
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 115 120 125  
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 Arg Tyr Pro Thr Leu Met Ser Trp Gln Leu Cys Leu Arg Met Thr Met  
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 Ser Ser Trp Leu Leu Gly Ala Ala Asp Gly Leu Leu Gln Ala Val Ala  
 145 150 155 160  
 acc ctg agc ttc cca tat tgc ggt gca cac gag atc gat cac ttc ttc 528  
 Thr Leu Ser Phe Pro Tyr Cys Gly Ala His Glu Ile Asp His Phe Phe  
 165 170 175  
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 Cys Glu Ala Pro Val Leu Val Arg Leu Ala Cys Ala Asp Thr Ser Val



	180	185	190	
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Phe Glu Asn Ala Met Tyr Ile Cys Cys Val Leu Met Leu Leu Val Pro				
	195	200	205	
ttt tcc ctc atc ctg tcc tcc tat ggt ctc atc ctc gct gct gtt ctg				672
Phe Ser Leu Ile Leu Ser Ser Tyr Gly Leu Ile Leu Ala Ala Val Leu				
	210	215	220	
ctc atg cgc tct aca gaa gcc cgc aag aag gcc ttt gcc acc tgc tct				720
Leu Met Arg Ser Thr Glu Ala Arg Lys Lys Ala Phe Ala Thr Cys Ser				
	225	230	235	240
tca cat gtg gct gtg gtg gga ctc ttt tat gga gct ggc att ttt acc				768
Ser His Val Ala Val Val Gly Leu Phe Tyr Gly Ala Gly Ile Phe Thr				
	245	250	255	
tat atg aga ccc aaa tcc cac agg tcc act aac cac gat aag gtt gtg				816
Tyr Met Arg Pro Lys Ser His Arg Ser Thr Asn His Asp Lys Val Val				
	260	265	270	
tca gcc ttc tat act atg ttc acc cct tta cta aat ccc ctc atc tac				864
Ser Ala Phe Tyr Thr Met Phe Thr Pro Leu Leu Asn Pro Leu Ile Tyr				
	275	280	285	
agt gtg agg aac agt gag gtc aag gaa gcc ctg aaa cgg tgg ctg ggg				912
Ser Val Arg Asn Ser Glu Val Lys Glu Ala Leu Lys Arg Trp Leu Gly				
	290	295	300	
acg tgt gta aac cta aaa cac cag caa aat gag gcc cac agg tca aga				960
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	305	310	315	320
tga				963
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Trp Asp His Arg Leu His Arg Pro Met Tyr Phe Leu Leu Ser Gln Leu				
50 55 60				
Ser Leu Met Asp Met Met Leu Val Ser Thr Thr Val Pro Lys Met Ala				
65 70 75 80				

Ala Asp Tyr Leu Thr Gly Asn Lys Ala Ile Ser Arg Ala Gly Cys Gly  
85 90 95

Val Gln Ile Phe Phe Leu Pro Thr Leu Gly Gly Gly Glu Cys Phe Leu  
100 105 110

Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys His Pro Leu  
115 120 125

Arg Tyr Pro Thr Leu Met Ser Trp Gln Leu Cys Leu Arg Met Thr Met  
130 135 140

Ser Ser Trp Leu Leu Gly Ala Ala Asp Gly Leu Leu Gln Ala Val Ala  
145 150 155 160

Thr Leu Ser Phe Pro Tyr Cys Gly Ala His Glu Ile Asp His Phe Phe  
165 170 175

Cys Glu Ala Pro Val Leu Val Arg Leu Ala Cys Ala Asp Thr Ser Val  
180 185 190

Phe Glu Asn Ala Met Tyr Ile Cys Cys Val Leu Met Leu Leu Val Pro  
195 200 205

Phe Ser Leu Ile Leu Ser Ser Tyr Gly Leu Ile Leu Ala Ala Val Leu  
210 215 220

Leu Met Arg Ser Thr Glu Ala Arg Lys Lys Ala Phe Ala Thr Cys Ser  
225 230 235 240

Ser His Val Ala Val Val Gly Leu Phe Tyr Gly Ala Gly Ile Phe Thr  
245 250 255

Tyr Met Arg Pro Lys Ser His Arg Ser Thr Asn His Asp Lys Val Val  
260 265 270

Ser Ala Phe Tyr Thr Met Phe Thr Pro Leu Leu Asn Pro Leu Ile Tyr  
275 280 285

Ser Val Arg Asn Ser Glu Val Lys Glu Ala Leu Lys Arg Trp Leu Gly  
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 Ile Phe Asn His Ser Pro Thr His Thr Phe Leu Phe Phe Leu Val Leu  
 20 25 30  
 gcc atc ttt tca gtg gcc ttc atg gga aac tcc atc atg gtt ctc ctc 144  
 Ala Ile Phe Ser Val Ala Phe Met Gly Asn Ser Ile Met Val Leu Leu  
 35 40 45  
 atc tac ctg gat acc cag ctc cac acc ccc atg tac ttc ctc ctc agc 192  
 Ile Tyr Leu Asp Thr Gln Leu His Thr Pro Met Tyr Phe Leu Leu Ser  
 50 55 60  
 caa ctg tcc ctc atg gac ctc atg ctc atc tgc acc act gta ccc aag 240  
 Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Val Pro Lys  
 65 70 75 80  
 atg gcc ttc aac tac ttg tct ggc agc aag tcc att tct atg gct ggc 288  
 Met Ala Phe Asn Tyr Leu Ser Gly Ser Lys Ser Ile Ser Met Ala Gly  
 85 90 95  
 tgt gcc aca caa att ttc ttc tat ata tca ttg ctt ggc tcc gaa tgc 336  
 Cys Ala Thr Gln Ile Phe Phe Tyr Ile Ser Leu Leu Gly Ser Glu Cys  
 100 105 110  
 ttt ctg ttg gct gtt atg tct tat gac cgc tac act gcc att tgc cac 384  
 Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Tyr Thr Ala Ile Cys His  
 115 120 125  
 cct cta aga tac acc aat ctc atg aga ccc aaa att tgt gga ctt atg 432  
 Pro Leu Arg Tyr Thr Asn Leu Met Arg Pro Lys Ile Cys Gly Leu Met  
 130 135 140  
 act gcc ttc tcc tgg atc ctg ggc tct aca gat gga atc att gat gct 480  
 Thr Ala Phe Ser Trp Ile Leu Gly Ser Thr Asp Gly Ile Ile Asp Ala  
 145 150 155 160  
 gta gcg aca ttt tcc ttc tcc tac tgt ggg tct cgg gaa ata gcc cac 528  
 Val Ala Thr Phe Ser Phe Ser Tyr Cys Gly Ser Arg Glu Ile Ala His  
 165 170 175  
 ttc tgc tgt gac ttc cct tcc cta cta atc ctc tca tgc aat gac aca 576  
 Phe Cys Cys Asp Phe Pro Ser Leu Leu Ile Leu Ser Cys Asn Asp Thr  
 180 185 190

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tca ata ttt gaa gag gtt att ttc atc tgc tgt ata gta atg ctt gtt 624  
 Ser Ile Phe Glu Glu Val Ile Phe Ile Cys Cys Ile Val Met Leu Val  
 195 200 205

ttc cct gtt gca atc atc atc act tcc tat gct cga gtt att ctg gct 672  
 Phe Pro Val Ala Ile Ile Ile Thr Ser Tyr Ala Arg Val Ile Leu Ala  
 210 215 220

gtc att cac atg gga tct gga gag gga cgt cgc aaa gct ttt act act 720  
 Val Ile His Met Gly Ser Gly Glu Gly Arg Arg Lys Ala Phe Thr Thr  
 225 230 235 240

tgt tcc tct cac ctc atg gtg gtg gga atg tac tat gga gca ggt ttg 768  
 Cys Ser Ser His Leu Met Val Val Gly Met Tyr Tyr Gly Ala Gly Leu  
 245 250 255

ttc atg tgc att cag ccc aca tct cat cat tct cct atg cag gac aag 816  
 Phe Met Cys Ile Gln Pro Thr Ser His His Ser Pro Met Gln Asp Lys  
 260 265 270

atg gtg tct gta ttc tac acc atc gtc act ccc atg ctg aat cct ctc 864  
 Met Val Ser Val Phe Tyr Thr Ile Val Thr Pro Met Leu Asn Pro Leu  
 275 280 285

att tat agc ctc cgc aac aag gaa gtg acc aga gca tta atg aaa atc 912  
 Ile Tyr Ser Leu Arg Asn Lys Glu Val Thr Arg Ala Leu Met Lys Ile  
 290 295 300

tta gga aag ggc aag tct gga gat tga 939  
 Leu Gly Lys Gly Lys Ser Gly Asp  
 305 310

<210> 540  
 <211> 312  
 <212> PRT  
 <213> Homo Sapiens

<400> 540  
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Ile Phe Asn His Ser Pro Thr His Thr Phe Leu Phe Phe Leu Val Leu  
 20 25 30

Ala Ile Phe Ser Val Ala Phe Met Gly Asn Ser Ile Met Val Leu Leu  
 35 40 45

Ile Tyr Leu Asp Thr Gln Leu His Thr Pro Met Tyr Phe Leu Leu Ser  
 50 55 60

Gln Leu Ser Leu Met Asp Leu Met Leu Ile Cys Thr Thr Val Pro Lys  
 65 70 75 80

Met Ala Phe Asn Tyr Leu Ser Gly Ser Lys Ser Ile Ser Met Ala Gly  
 85 90 95

Cys Ala Thr Gln Ile Phe Phe Tyr Ile Ser Leu Leu Gly Ser Glu Cys  
 100 105 110

Phe Leu Leu Ala Val Met Ser Tyr Asp Arg Tyr Thr Ala Ile Cys His  
 115 120 125

Pro Leu Arg Tyr Thr Asn Leu Met Arg Pro Lys Ile Cys Gly Leu Met  
 130 135 140

Thr Ala Phe Ser Trp Ile Leu Gly Ser Thr Asp Gly Ile Ile Asp Ala  
 145 150 155 160

Val Ala Thr Phe Ser Phe Ser Tyr Cys Gly Ser Arg Glu Ile Ala His  
 165 170 175

Phe Cys Cys Asp Phe Pro Ser Leu Leu Ile Leu Ser Cys Asn Asp Thr  
 180 185 190

Ser Ile Phe Glu Glu Val Ile Phe Ile Cys Cys Ile Val Met Leu Val  
 195 200 205

Phe Pro Val Ala Ile Ile Ile Thr Ser Tyr Ala Arg Val Ile Leu Ala  
 210 215 220

Val Ile His Met Gly Ser Gly Glu Gly Arg Arg Lys Ala Phe Thr Thr  
 225 230 235 240

Cys Ser Ser His Leu Met Val Val Gly Met Tyr Tyr Gly Ala Gly Leu  
 245 250 255

Phe Met Cys Ile Gln Pro Thr Ser His His Ser Pro Met Gln Asp Lys  
 260 265 270

Met Val Ser Val Phe Tyr Thr Ile Val Thr Pro Met Leu Asn Pro Leu  
 275 280 285

Ile Tyr Ser Leu Arg Asn Lys Glu Val Thr Arg Ala Leu Met Lys Ile  
 290 295 300

Leu Gly Lys Gly Lys Ser Gly Asp  
 305 310

<210> 541  
 <211> 963  
 <212> DNA

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&lt;213&gt; Homo Sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(960)

&lt;223&gt;

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 Met Glu Met Arg Asn Thr Thr Pro Asp Phe Ile Leu Leu Gly Leu Phe  
 1 5 10 15

aac cac acc aga gcc cac caa gtc ctc ttc atg atg gtt ctg agt atc 96  
 Asn His Thr Arg Ala His Gln Val Leu Phe Met Met Val Leu Ser Ile  
 20 25 30

gtt ttg acc tcc ctg ttt ggc aat tcc ctc atg att ctc ctg att cac 144  
 Val Leu Thr Ser Leu Phe Gly Asn Ser Leu Met Ile Leu Leu Ile His  
 35 40 45

tgg gac cac cgg ctc cac acg ccc atg tac ttc ctc ctg agc caa ctt 192  
 Trp Asp His Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ser Gln Leu  
 50 55 60

tcc ctc atg gac atg atg ctg gtt tcc acc act gtg ccc aaa atg gcg 240  
 Ser Leu Met Asp Met Met Leu Val Ser Thr Thr Val Pro Lys Met Ala  
 65 70 75 80

gct gac tac ttg acc gga agt aag gcc atc tcc cgc gct ggc tgt ggt 288  
 Ala Asp Tyr Leu Thr Gly Ser Lys Ala Ile Ser Arg Ala Gly Cys Gly  
 85 90 95

gtg cag atc ttc ttc ctc ccc aca ctg ggt ggt gga gag tgc ttc ctc 336  
 Val Gln Ile Phe Phe Leu Pro Thr Leu Gly Gly Gly Glu Cys Phe Leu  
 100 105 110

tta gca gcc atg gcc tat gac cgc tat gcg gct gtc tgc cac cca ctc 384  
 Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys His Pro Leu  
 115 120 125

cga tat ccc act ctc atg agc tgg cag ctg tgc ctg agg atg acc atg 432  
 Arg Tyr Pro Thr Leu Met Ser Trp Gln Leu Cys Leu Arg Met Thr Met  
 130 135 140

tcg tgt tgg ctc ctg ggt gca gct gac ggg ctc ctg cag gct gtt gtt 480  
 Ser Cys Trp Leu Leu Gly Ala Ala Asp Gly Leu Leu Gln Ala Val Val  
 145 150 155 160

acc ctg agc ttc cca tat tgt ggt gca cac gag atc gat cac ttc ttc 528  
 Thr Leu Ser Phe Pro Tyr Cys Gly Ala His Glu Ile Asp His Phe Phe  
 165 170 175

tgc gag acc ccc gtg ctg gtg cgt ttg gct tgt gct gac act tca gtc 576  
 Cys Glu Thr Pro Val Leu Val Arg Leu Ala Cys Ala Asp Thr Ser Val  
 180 185 190

ttc gaa aac gcc atg tac atc tgc tgt gtg tta atg ctc ctg gtc ccc 624  
 Phe Glu Asn Ala Met Tyr Ile Cys Cys Val Leu Met Leu Leu Val Pro  
 195 200 205

ttt tcc ctc atc ctg tcc tcc tat ggt ctc atc ctc gct gct gtt ctg 672  
 Phe Ser Leu Ile Leu Ser Ser Tyr Gly Leu Ile Leu Ala Ala Val Leu  
 210 215 220  
  
 cac atg cgc tct aca gaa gcc cgc aag aag gcc ttt gcc acc tgc tct 720  
 His Met Arg Ser Thr Glu Ala Arg Lys Lys Ala Phe Ala Thr Cys Ser  
 225 230 235 240  
  
 tca cat gtg gct gtg gtg gga ctc ttt tat gga gct gcc att ttt acc 768  
 Ser His Val Ala Val Val Gly Leu Phe Tyr Gly Ala Ala Ile Phe Thr  
 245 250 255  
  
 tat atg aga ccc aaa tcc cat agg tcc act aac cat gac aag gtt gtg 816  
 Tyr Met Arg Pro Lys Ser His Arg Ser Thr Asn His Asp Lys Val Val  
 260 265 270  
  
 tca gcc ttc tat act atg ttc acc cct tta cta aac ccc ctc atc tac 864  
 Ser Ala Phe Tyr Thr Met Phe Thr Pro Leu Leu Asn Pro Leu Ile Tyr  
 275 280 285  
  
 agt gtg aag aac agt gag gtg aag gga gcc ctg aaa cgg tgg ctg ggg 912  
 Ser Val Lys Asn Ser Glu Val Lys Gly Ala Leu Lys Arg Trp Leu Gly  
 290 295 300  
  
 acg tgt gta aac ata aaa cac cag caa aat gag gcc cac agg tca aga 960  
 Thr Cys Val Asn Ile Lys His Gln Gln Asn Glu Ala His Arg Ser Arg  
 305 310 315 320  
  
 tga 963

<210> 542  
 <211> 320  
 <212> PRT  
 <213> Homo Sapiens

<400> 542  
 Met Glu Met Arg Asn Thr Thr Pro Asp Phe Ile Leu Leu Gly Leu Phe  
 1 5 10 15  
  
 Asn His Thr Arg Ala His Gln Val Leu Phe Met Met Val Leu Ser Ile  
 20 25 30  
  
 Val Leu Thr Ser Leu Phe Gly Asn Ser Leu Met Ile Leu Leu Ile His  
 35 40 45  
  
 Trp Asp His Arg Leu His Thr Pro Met Tyr Phe Leu Leu Ser Gln Leu  
 50 55 60  
  
 Ser Leu Met Asp Met Met Leu Val Ser Thr Thr Val Pro Lys Met Ala  
 65 70 75 80  
  
 Ala Asp Tyr Leu Thr Gly Ser Lys Ala Ile Ser Arg Ala Gly Cys Gly  
 85 90 95

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Val Gln Ile Phe Phe Leu Pro Thr Leu Gly Gly Gly Glu Cys Phe Leu  
 100 105 110

Leu Ala Ala Met Ala Tyr Asp Arg Tyr Ala Ala Val Cys His Pro Leu  
 115 120 125

Arg Tyr Pro Thr Leu Met Ser Trp Gln Leu Cys Leu Arg Met Thr Met  
 130 135 140

Ser Cys Trp Leu Leu Gly Ala Ala Asp Gly Leu Leu Gln Ala Val Val  
 145 150 155 160

Thr Leu Ser Phe Pro Tyr Cys Gly Ala His Glu Ile Asp His Phe Phe  
 165 170 175

Cys Glu Thr Pro Val Leu Val Arg Leu Ala Cys Ala Asp Thr Ser Val  
 180 185 190

Phe Glu Asn Ala Met Tyr Ile Cys Cys Val Leu Met Leu Leu Val Pro  
 195 200 205

Phe Ser Leu Ile Leu Ser Ser Tyr Gly Leu Ile Leu Ala Ala Val Leu  
 210 215 220

His Met Arg Ser Thr Glu Ala Arg Lys Lys Ala Phe Ala Thr Cys Ser  
 225 230 235 240

Ser His Val Ala Val Val Gly Leu Phe Tyr Gly Ala Ala Ile Phe Thr  
 245 250 255

Tyr Met Arg Pro Lys Ser His Arg Ser Thr Asn His Asp Lys Val Val  
 260 265 270

Ser Ala Phe Tyr Thr Met Phe Thr Pro Leu Leu Asn Pro Leu Ile Tyr  
 275 280 285

Ser Val Lys Asn Ser Glu Val Lys Gly Ala Leu Lys Arg Trp Leu Gly  
 290 295 300

Thr Cys Val Asn Ile Lys His Gln Gln Asn Glu Ala His Arg Ser Arg  
 305 310 315 320

<210> 543  
 <211> 933  
 <212> DNA  
 <213> Homo Sapiens



&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1) .. (930)

&lt;223&gt;

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48

Met Asp Pro Gly Asn His Ser Ser Val Thr Glu Ser Ile Leu Ala Gly  
 1 5 10 15

ctc tca gaa cag cca gag ctc cag ctg cgc ctc ttc ctc ctg ttc tta 96  
 Leu Ser Glu Gln Pro Glu Leu Gln Leu Arg Leu Phe Leu Leu Phe Leu  
 20 25 30

gga atc tgt gtg gtc aca gtg gtg ggc aac ttg ggc atg atc aca ctg 144  
 Gly Ile Cys Val Val Thr Val Val Gly Asn Leu Gly Met Ile Thr Leu  
 35 40 45

att ggg ctc agt tct cac ctg cac aca cct atg tac tat ttc ctc agc 192  
 Ile Gly Leu Ser Ser His Leu His Thr Pro Met Tyr Tyr Phe Leu Ser  
 50 55 60

agt ctg tcc ttc att gac ttc tgc cat tcc act gtc att acc cct aag 240  
 Ser Leu Ser Phe Ile Asp Phe Cys His Ser Thr Val Ile Thr Pro Lys  
 65 70 75 80

atg ctg gtg aac ttt gcg aca gag aag aac atc atc tcc tac cct gaa 288  
 Met Leu Val Asn Phe Ala Thr Glu Lys Asn Ile Ile Ser Tyr Pro Glu  
 85 90 95

tgc atg gct cag ctc tat tta ttc agt att ttt gct att gca gag tgt 336  
 Cys Met Ala Gln Leu Tyr Leu Phe Ser Ile Phe Ala Ile Ala Glu Cys  
 100 105 110

cac atg ttg gct gca atg gcg tat gac tgt tat gtt gcc atc tgc agc 384  
 His Met Leu Ala Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Ser  
 115 120 125

ccc ttg ctg tac aat gtc atc atg tcc tat cac cgc tgc ttc tgg ctc 432  
 Pro Leu Leu Tyr Asn Val Ile Met Ser Tyr His Arg Cys Phe Trp Leu  
 130 135 140

aca gtg gga gtt tac att tta ggc atc ctt gga tct aca att cat acc 480  
 Thr Val Gly Val Tyr Ile Leu Gly Ile Leu Gly Ser Thr Ile His Thr  
 145 150 155 160

agt ttt atg ttg aga ctc ttt ttg tgc aag act aat gtg att aac cat 528  
 Ser Phe Met Leu Arg Leu Phe Leu Cys Lys Thr Asn Val Ile Asn His  
 165 170 175

tat ttt tgt gat ctt ttc cct ctc ttg ggg ctc tcc tgc tcc agc acc 576  
 Tyr Phe Cys Asp Leu Phe Pro Leu Leu Gly Leu Ser Cys Ser Ser Thr  
 180 185 190

tac atc aat gaa tta ctg gtt ctg gtc ttg agt gca ttt aac atc ctg 624  
 Tyr Ile Asn Glu Leu Leu Val Leu Val Leu Ser Ala Phe Asn Ile Leu  
 195 200 205

atg cct gcc tta acc atc ctt gct tct tac atc ttt atc att gcc agc 672  
 Met Pro Ala Leu Thr Ile Leu Ala Ser Tyr Ile Phe Ile Ile Ala Ser

210	215	220	
atc ctc cgc att cac tcc act gag ggc agg tcc aaa gcc ttt agc act			720
Ile Leu Arg Ile His Ser Thr Glu Gly Arg Ser Lys Ala Phe Ser Thr			
225	230	235	240
tgc agc tcc cac atc ttg gct gtt gct gtt ttc ttt gga tct gca gca			768
Cys Ser Ser His Ile Leu Ala Val Ala Val Phe Phe Gly Ser Ala Ala			
245	250		255
ttc atg tac ctg cag cca tca tct gtc agc tcc atg gac cag agg aaa			816
Phe Met Tyr Leu Gln Pro Ser Ser Val Ser Ser Met Asp Gln Arg Lys			
260	265		270
gtg tcg tct gtg ttt tat act act att gtg ccc atg ctg aac ccc ctg			864
Val Ser Ser Val Phe Tyr Thr Thr Ile Val Pro Met Leu Asn Pro Leu			
275	280		285
atc tac agc ctg agg aat aaa gat gtc aaa ctt gcc gtg aag aaa att			912
Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Leu Ala Val Lys Lys Ile			
290	295	300	
ctg cat cag aca gca tgt taa			933
Leu His Gln Thr Ala Cys			
305	310		

<210> 544  
 <211> 310  
 <212> PRT  
 <213> Homo Sapiens

<400> 544  
 Met Asp Pro Gly Asn His Ser Ser Val Thr Glu Ser Ile Leu Ala Gly  
 1 5 10 15

Leu Ser Glu Gln Pro Glu Leu Gln Leu Arg Leu Phe Leu Leu Phe Leu  
 20 25 30

Gly Ile Cys Val Val Thr Val Val Gly Asn Leu Gly Met Ile Thr Leu  
 35 40 45

Ile Gly Leu Ser Ser His Leu His Thr Pro Met Tyr Tyr Phe Leu Ser  
 50 55 60

Ser Leu Ser Phe Ile Asp Phe Cys His Ser Thr Val Ile Thr Pro Lys  
 65 70 75 80

Met Leu Val Asn Phe Ala Thr Glu Lys Asn Ile Ile Ser Tyr Pro Glu  
 85 90 95

Cys Met Ala Gln Leu Tyr Leu Phe Ser Ile Phe Ala Ile Ala Glu Cys  
 100 105 110

His Met Leu Ala Ala Met Ala Tyr Asp Cys Tyr Val Ala Ile Cys Ser  
 115 120 125

Pro Leu Leu Tyr Asn Val Ile Met Ser Tyr His Arg Cys Phe Trp Leu  
 130 135 140

Thr Val Gly Val Tyr Ile Leu Gly Ile Leu Gly Ser Thr Ile His Thr  
 145 150 155 160

Ser Phe Met Leu Arg Leu Phe Leu Cys Lys Thr Asn Val Ile Asn His  
 165 170 175

Tyr Phe Cys Asp Leu Phe Pro Leu Leu Gly Leu Ser Cys Ser Ser Thr  
 180 185 190

Tyr Ile Asn Glu Leu Leu Val Leu Val Leu Ser Ala Phe Asn Ile Leu  
 195 200 205

Met Pro Ala Leu Thr Ile Leu Ala Ser Tyr Ile Phe Ile Ile Ala Ser  
 210 215 220

Ile Leu Arg Ile His Ser Thr Glu Gly Arg Ser Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ser Ser His Ile Leu Ala Val Ala Val Phe Phe Gly Ser Ala Ala  
 245 250 255

Phe Met Tyr Leu Gln Pro Ser Ser Val Ser Ser Met Asp Gln Arg Lys  
 260 265 270

Val Ser Ser Val Phe Tyr Thr Thr Ile Val Pro Met Leu Asn Pro Leu  
 275 280 285

Ile Tyr Ser Leu Arg Asn Lys Asp Val Lys Leu Ala Val Lys Lys Ile  
 290 295 300

Leu His Gln Thr Ala Cys  
 305 310

<210> 545  
 <211> 936  
 <212> DNA  
 <213> Homo Sapiens

<220>  
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 <222> (1)..(936)  
 <223>

<400> 545atg gca gca gaa aac cat tct ttt gtg act aag ttt att ctg gtt ggg  
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 1 5 10 15

cta aca gag aag tca gag cta cag ctg ccc ctc ttc ctc gtc ttc ctg 96  
 Leu Thr Glu Lys Ser Glu Leu Gln Leu Pro Leu Phe Leu Val Phe Leu  
 20 25 30

gga atc tat gta gtc aca gtg ctg ggg aac ctg ggc atg atc aca ctg 144  
 Gly Ile Tyr Val Val Thr Val Leu Gly Asn Leu Gly Met Ile Thr Leu  
 35 40 45

att ggg ctc agt tct cac ctg cac aca cct atg tac tgt ttc ctc agc 192  
 Ile Gly Leu Ser Ser His Leu His Thr Pro Met Tyr Cys Phe Leu Ser  
 50 55 60

agt ctg tcc ttc att gac ttc tgc cat tcc act gtc att acc cct aag 240  
 Ser Leu Ser Phe Ile Asp Phe Cys His Ser Thr Val Ile Thr Pro Lys  
 65 70 75 80

atg ctg gtg aac ttt gtg aca gag aag aac atc atc tcc tac cct gaa 288  
 Met Leu Val Asn Phe Val Thr Glu Lys Asn Ile Ile Ser Tyr Pro Glu  
 85 90 95

tgc atg act cag ctc tac ttc ttc ctc gtt ttt gct att gca gag tgt 336  
 Cys Met Thr Gln Leu Tyr Phe Phe Leu Val Phe Ala Ile Ala Glu Cys  
 100 105 110

cac atg ttg gct gca atg gca tat gac ggc tac gtg gcc atc tgt agc 384  
 His Met Leu Ala Ala Met Ala Tyr Asp Gly Tyr Val Ala Ile Cys Ser  
 115 120 125

ccc ttg ctg tac agc atc atc ata tcc aat aag gct tgc ttt tct ctg 432  
 Pro Leu Leu Tyr Ser Ile Ile Ile Ser Asn Lys Ala Cys Phe Ser Leu  
 130 135 140

att tta gtg gtg tat gta ata ggc ctg att tgt gcg tca gct cat ata 480  
 Ile Leu Val Val Tyr Val Ile Gly Leu Ile Cys Ala Ser Ala His Ile  
 145 150 155 160

ggc tgt atg ttt agg gtt caa ttc tgc aaa ttt gat gtg atc aac cat 528  
 Gly Cys Met Phe Arg Val Gln Phe Cys Lys Phe Asp Val Ile Asn His  
 165 170 175

tat ttc tgt gat ctt att tct atc ttg aag ctc tcc tgt tct agt act 576  
 Tyr Phe Cys Asp Leu Ile Ser Ile Leu Lys Leu Ser Cys Ser Ser Thr  
 180 185 190

tac att aat gag tta ctg att tta atc ttt agt gga att aac atc ctt 624  
 Tyr Ile Asn Glu Leu Leu Ile Leu Ile Phe Ser Gly Ile Asn Ile Leu  
 195 200 205

gtc ccc agc ctg acc atc ctc agc tct tac atc ttc atc att gcc agc 672  
 Val Pro Ser Leu Thr Ile Leu Ser Ser Tyr Ile Phe Ile Ile Ala Ser  
 210 215 220

atc ctc cgc att cgc tac act gag ggc agg tcc aaa gcc ttc agc act 720  
 Ile Leu Arg Ile Arg Tyr Thr Glu Gly Arg Ser Lys Ala Phe Ser Thr

225                      230                      235                      240  
 tgc agc tcc cac atc tcg gct gtt tct gtt ttc ttt ggg tct gca gca      768  
 Cys Ser Ser His Ile Ser Ala Val Ser Val Phe Phe Gly Ser Ala Ala  
                          245                      250                      255  
 ttc atg tac ctg cag cca tca tct gtc agc tcc atg gac cag ggg aaa      816  
 Phe Met Tyr Leu Gln Pro Ser Ser Val Ser Ser Met Asp Gln Gly Lys  
                          260                      265                      270  
 gtg tcc tct gtg ttt tat act att gtt gtg ccc atg ctg aac ccc ctg      864  
 Val Ser Ser Val Phe Tyr Thr Ile Val Val Pro Met Leu Asn Pro Leu  
                          275                      280                      285  
 atc tac agc ctg agg aat aaa gat gtc cac gtt gcc ctg aag aaa acg      912  
 Ile Tyr Ser Leu Arg Asn Lys Asp Val His Val Ala Leu Lys Lys Thr  
                          290                      295                      300  
 cta ggg aaa aga aca ttc tta tga      936  
 Leu Gly Lys Arg Thr Phe Leu  
 305                      310  
  
 <210> 546  
 <211> 311  
 <212> PRT  
 <213> Homo Sapiens  
  
 <400> 546  
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 Leu Thr Glu Lys Ser Glu Leu Gln Leu Pro Leu Phe Leu Val Phe Leu  
                          20                      25                      30  
  
 Gly Ile Tyr Val Val Thr Val Leu Gly Asn Leu Gly Met Ile Thr Leu  
                          35                      40                      45  
  
 Ile Gly Leu Ser Ser His Leu His Thr Pro Met Tyr Cys Phe Leu Ser  
                          50                      55                      60  
  
 Ser Leu Ser Phe Ile Asp Phe Cys His Ser Thr Val Ile Thr Pro Lys  
 65                      70                      75                      80  
  
 Met Leu Val Asn Phe Val Thr Glu Lys Asn Ile Ile Ser Tyr Pro Glu  
                          85                      90                      95  
  
 Cys Met Thr Gln Leu Tyr Phe Phe Leu Val Phe Ala Ile Ala Glu Cys  
                          100                      105                      110  
  
 His Met Leu Ala Ala Met Ala Tyr Asp Gly Tyr Val Ala Ile Cys Ser  
                          115                      120                      125

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Pro Leu Leu Tyr Ser Ile Ile Ile Ser Asn Lys Ala Cys Phe Ser Leu  
 130 135 140

Ile Leu Val Val Tyr Val Ile Gly Leu Ile Cys Ala Ser Ala His Ile  
 145 150 155 160

Gly Cys Met Phe Arg Val Gln Phe Cys Lys Phe Asp Val Ile Asn His  
 165 170 175

Tyr Phe Cys Asp Leu Ile Ser Ile Leu Lys Leu Ser Cys Ser Ser Thr  
 180 185 190

Tyr Ile Asn Glu Leu Leu Ile Leu Ile Phe Ser Gly Ile Asn Ile Leu  
 195 200 205

Val Pro Ser Leu Thr Ile Leu Ser Ser Tyr Ile Phe Ile Ile Ala Ser  
 210 215 220

Ile Leu Arg Ile Arg Tyr Thr Glu Gly Arg Ser Lys Ala Phe Ser Thr  
 225 230 235 240

Cys Ser Ser His Ile Ser Ala Val Ser Val Phe Phe Gly Ser Ala Ala  
 245 250 255

Phe Met Tyr Leu Gln Pro Ser Ser Val Ser Ser Met Asp Gln Gly Lys  
 260 265 270

Val Ser Ser Val Phe Tyr Thr Ile Val Val Pro Met Leu Asn Pro Leu  
 275 280 285

Ile Tyr Ser Leu Arg Asn Lys Asp Val His Val Ala Leu Lys Lys Thr  
 290 295 300

Leu Gly Lys Arg Thr Phe Leu  
 305 310

<210> 547  
 <211> 906  
 <212> DNA  
 <213> Homo sapiens

<220>  
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 <222> (1)..(903)  
 <223>

<400> 547atg gcc tcc cgg tat gtg gca gtg gga atg atc tta tca cag acc gtg  
 48

Met	Ala	Ser	Arg	Tyr	Val	Ala	Val	Gly	Met	Ile	Leu	Ser	Gln	Thr	Val	
1				5					10					15		
gtg	gga	gtc	ctg	ggg	agc	ttc	tct	ggt	ctt	ctc	cat	tat	ctc	tcc	ttt	96
Val	Gly	Val	Leu	Gly	Ser	Phe	Ser	Val	Leu	Leu	His	Tyr	Leu	Ser	Phe	
			20					25					30			
tac	tgc	act	ggg	tgc	agg	tta	agg	tcc	aca	gat	ttg	att	ggt	aag	cac	144
Tyr	Cys	Thr	Gly	Cys	Arg	Leu	Arg	Ser	Thr	Asp	Leu	Ile	Val	Lys	His	
		35					40					45				
ctg	att	gta	gcc	aac	ttc	tta	gct	ctc	cgc	tgt	aaa	gga	gtc	ccc	cag	192
Leu	Ile	Val	Ala	Asn	Phe	Leu	Ala	Leu	Arg	Cys	Lys	Gly	Val	Pro	Gln	
	50					55					60					
aca	atg	gca	gct	ttt	ggg	ggt	aga	tat	ttt	ctc	aat	gct	ctt	ggg	tgc	240
Thr	Met	Ala	Ala	Phe	Gly	Val	Arg	Tyr	Phe	Leu	Asn	Ala	Leu	Gly	Cys	
65					70				75				80			
aaa	ctt	gtt	ttc	tat	ctc	cat	aga	gtg	ggc	agg	gga	gtg	tcc	att	ggc	288
Lys	Leu	Val	Phe	Tyr	Leu	His	Arg	Val	Gly	Arg	Gly	Val	Ser	Ile	Gly	
			85						90				95			
acc	acc	tgc	ctc	ttg	agt	gtc	ttc	cag	gtg	atc	acg	gtc	agc	tcc	agg	336
Thr	Thr	Cys	Leu	Leu	Ser	Val	Phe	Gln	Val	Ile	Thr	Val	Ser	Ser	Arg	
			100					105					110			
aaa	tcc	agg	tgg	gca	aaa	ctt	aaa	gag	aaa	gcc	ccc	aag	cat	gtt	ggc	384
Lys	Ser	Arg	Trp	Ala	Lys	Leu	Lys	Glu	Lys	Ala	Pro	Lys	His	Val	Gly	
		115					120					125				
ttt	tct	gtt	ctc	ctg	tgc	tgg	atc	gtg	tgc	atg	ttg	gta	aac	atc	atc	432
Phe	Ser	Val	Leu	Leu	Cys	Trp	Ile	Val	Cys	Met	Leu	Val	Asn	Ile	Ile	
	130					135					140					
ttt	ccc	atg	tat	gtg	act	ggc	aaa	tgg	aac	tac	aca	aac	atc	aca	gtg	480
Phe	Pro	Met	Tyr	Val	Thr	Gly	Lys	Trp	Asn	Tyr	Thr	Asn	Ile	Thr	Val	
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Asn	Glu	Asp	Leu	Gly	Tyr	Cys	Ser	Gly	Gly	Gly	Asn	Asn	Lys	Ile	Ala	
				165					170				175			
cag	aca	ctg	cgt	gca	atg	ttg	tta	tca	ttc	cct	gat	gtg	ttg	tgt	ctg	576
Gln	Thr	Leu	Arg	Ala	Met	Leu	Leu	Ser	Phe	Pro	Asp	Val	Leu	Cys	Leu	
			180					185					190			
ggg	ctc	atg	ctc	tgg	gtc	agc	agc	tcc	atg	gtt	tgc	ata	ctg	cac	agg	624
Gly	Leu	Met	Leu	Trp	Val	Ser	Ser	Ser	Met	Val	Cys	Ile	Leu	His	Arg	
		195					200					205				
cac	aag	cag	cgg	gtc	cag	cac	att	gat	agg	agc	aat	ctc	tcc	ccc	aga	672
His	Lys	Gln	Arg	Val	Gln	His	Ile	Asp	Arg	Ser	Asn	Leu	Ser	Pro	Arg	
		210				215					220					
gcc	tcc	cca	gag	aac	aga	gct	acg	cag	agc	atc	ctc	atc	ctg	gtg	agc	720
Ala	Ser	Pro	Glu	Asn	Arg	Ala	Thr	Gln	Ser	Ile	Leu	Ile	Leu	Val	Ser	
225					230					235				240		
acc	ttt	gtg	tct	tct	tac	act	ctc	tcc	tgc	ctt	ttc	caa	gtt	tgt	atg	768
Thr	Phe	Val	Ser	Ser	Tyr	Thr	Leu	Ser	Cys	Leu	Phe	Gln	Val	Cys	Met	

818



Asn Glu Asp Leu Gly Tyr Cys Ser Gly Gly Gly Asn Asn Lys Ile Ala  
165 170 175

Gln Thr Leu Arg Ala Met Leu Leu Ser Phe Pro Asp Val Leu Cys Leu  
180 185 190

Gly Leu Met Leu Trp Val Ser Ser Ser Met Val Cys Ile Leu His Arg  
195 200 205

His Lys Gln Arg Val Gln His Ile Asp Arg Ser Asn Leu Ser Pro Arg  
210 215 220

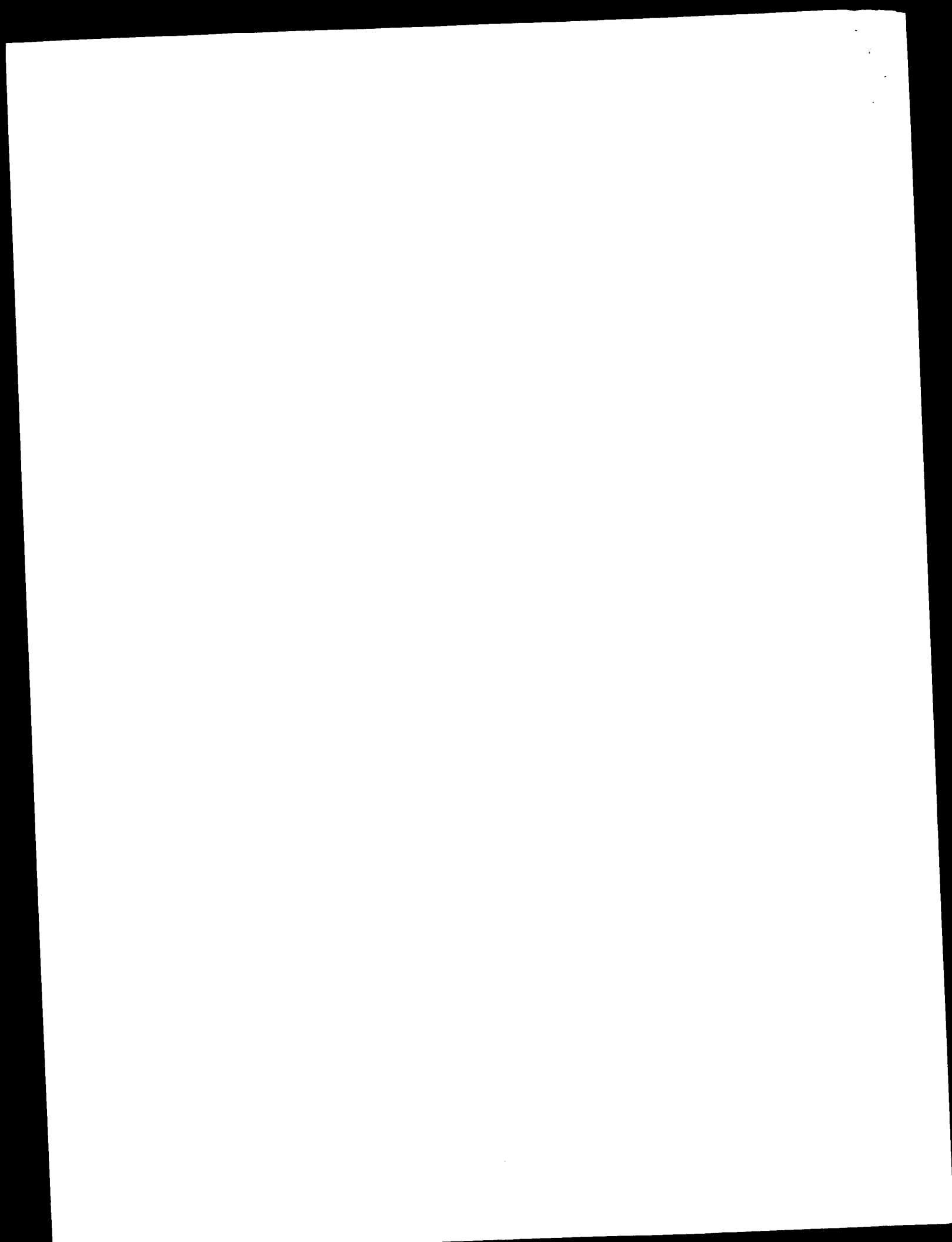
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225 230 235 240

Thr Phe Val Ser Ser Tyr Thr Leu Ser Cys Leu Phe Gln Val Cys Met  
245 250 255

Ala Leu Leu Asp Asn Pro Asn Ser Leu Leu Val Asn Thr Ser Ala Leu  
260 265 270

Met Ser Val Cys Phe Pro Thr Leu Ser Pro Phe Val Leu Met Ser Cys  
275 280 285

Asp Pro Ser Val Tyr Arg Phe Cys Phe Ala Trp Lys Arg  
290 295 300



(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
28 March 2002 (28.03.2002)

PCT

(10) International Publication Number  
**WO 02/024726 A3**

(51) International Patent Classification<sup>7</sup>: **C07K 14/72**,  
C12N 15/00

(21) International Application Number: PCT/BE01/00162

(22) International Filing Date:  
21 September 2001 (21.09.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
00870211.0 22 September 2000 (22.09.2000) EP

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Malderen, Place Reine Fabiola, 6/1, B-1083 Brussels  
(BE).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI,  
SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,  
ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian  
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European  
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,  
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,  
TG).

**Published:**

with international search report  
with sequence listing part of description published sepa-  
rately in electronic form and available upon request from  
the International Bureau

(88) Date of publication of the international search report:  
9 January 2003

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: OLEFACTORY AND PHEROMONES G-PROTEIN COUPLED RECEPTORS

(57) Abstract: The present invention is related to an olfactory or pheromone G-protein coupled receptor having an amino acid sequence as set forth in the sequence SEQ ID NO. 2.

WO 02/024726 A3

# INTERNATIONAL SEARCH REPORT

In Application No  
PCT/BE 01/00162

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C07K14/72 C12N15/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, EMBL

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	WO 01 57085 A (INCYTE GENOMICS INC ;YUE HENRY (US); AU YOUNG JANICE (US); BAUGHN) 9 August 2001 (2001-08-09) abstract Sequence Id.No.13	1-3,5-7, 9
X,P	EP 1 096 008 A (PFIZER LTD ;PFIZER (US)) 2 May 2001 (2001-05-02) abstract page 36 claim 22	1-3,5-7, 9

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
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- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- \*G\* document member of the same patent family

Date of the actual completion of the international search

23 July 2002

Date of mailing of the international search report

12/08/2002

Name and mailing address of the ISA  
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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/BE 01/00162

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X,P	DATABASE EMBL 'Online! EMBO, Heidelberg, DE; 1 June 2001 (2001-06-01) WANG Y-G, GONG L: "Cloning and characterization of FKSG46, a novel gene located on human chromosome 16" retrieved from TREMBL Database accession no. Q9BXE9 XP002207010 abstract -----	1-3,5
A	WO 00 06593 A (LINDEMEIER JUERGEN ;ADLER JON ELLIOTT (US); UNIV CALIFORNIA (US);) 10 February 2000 (2000-02-10) abstract -----	1-3,5-7, 9
A	WO 94 05695 A (UNIV NEW YORK) 17 March 1994 (1994-03-17) abstract -----	1-3,5,7, 9

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Present claims 1-3 5-7, 9 and dependent ones, relate to an extremely large number of possible compounds, namely all the possible sequences sharing a percentage of identity up to 95% with the claimed sequences. Support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT is to be found, however, for only one given sequence for the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts relating to the compound as defined by Seq.Id.No. 1 and 2 (respectively DNA and amino acid sequences).

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/BE 01/00162

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

Information on patent family members

Inventor's Application No

PCT/BE 01/00162

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0157085	A	09-08-2001	AU 3476601 A WO 0157085 A2	14-08-2001 09-08-2001
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